

Chronological and Historical Account
Of the most Memorable

EARTHQUAKES

That have happened in the WORLD,
From the Beginning of the Christian Period
to the present Year 1750.

With an APPENDIX, containing
A distinct Series of those that have been
felt in ENGLAND.

And a PREFACE, seriously address'd
To all CHRISTIANS of every Denomination.

By a Gentleman of the University of Cambridge.

Suppose ye that these Galileans were sinners above all the Galileans, because they suffered such things? — Or those eighteen upon whom the Tower of Siloam fell, and slew them, think ye that they were sinners above all men that dwell in Jerusalem? I tell you, Nay; but except ye repent, ye shall all likewise perish. Luke 13. 2, 4, 5.

Teræ motus — Quo in rerum natura nihil terribilius, formidabiliusque, nihil funestius humano generi accidere potest, maximum Dei flagellum, quò DEUS OPT. MAX. homines sibi perduelles, et mandatorum suorum contemptores, unice castigare solet. Quas non urbes hinc subverfas, quas regiones non devastatas, montes non everfos legimus? Kircheri Mund. Subter. Vol. 1. p. 239.

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THE P. R E F A C E.

BEING

A serious Address to all Christians.

AS the two late Shocks of an Earthquake in the Cities of *London* and *Westminster*, and parts adjacent, have occasioned (and not without great reason) no small Terror and Consternation to the Inhabitants; so should they be an admonition even to us at a distance, to ^a*put away the evil of our doings.*

If we only consider, how fatal the consequences of such *Shocks* have been in several other parts of the World; we ought to magnify the Mercies of the Lord towards us, that we have not *hitherto been swallowed up.*

Our escape from such fatal Effects, has not surely been owing to our own *Goodness*, but to a superintending Providence, which has hitherto thought fit to spare an undeserving People.

And had those unhappy Nations, which have felt the direful effects of *Earthquakes*, met with so many seasonable Warnings as we have had, 'tis possible they might ^b*long ago have repented in sackcloth and ashes.*

Let us not therefore censure them as more profligate Sinners than ourselves, though they have suffered, and we (God be praised) have hitherto escaped.

^a *Isaiab* 1. 16. ^b *Matt.* xi. 21.

This would be an unaccountable piece of presumption indeed, and a setting up of our selves as Interpreters of God's Judgments upon others; and assigning unwarrantable reasons, why God's *afflicting*, or even *avenging* Hand, has been heavier upon those unhappy People than upon our selves.

Though the stroke of Divine Vengeance sometimes leaves visible marks behind it, that point out plainly enough, the particular Cause of the *Vengeance*, yet we ought to be cautious how we judge in such instances; and apply them only as proper Motives, and Warnings towards our own Repentance.

Let Us therefore, who have heard of the terrible Disasters of this kind, in *Naples* and *Sicily*, in *Jamaica*, and very lately at *Lima* and *Callao* in the Kingdom of *Peru*; and have had Shocks of the same kind in^c divers Parts of this Kingdom: Let us, I say, hasten our Repentance, lest our^d *Hearts should be hardened through the deceitfulness of Sin*; and let us not sin on, lest the same, or *some worse Evil* should befall us; and lest destruction should overtake us, in the midst of our Security. But alas! how can we lull ourselves into the vain Dream of Security? what is there that should screen Us from the divine Wrath, or give us a Title to the privilege of Exemption? Shall we plead for ourselves, in the Style of the *Jews* of old; *“The Temple of the Lord, the Temple of the Lord; The Protestant Religion, The*

^c *Cowes* in the Isle of *Wight*, *Chester*, *Liverpool*, &c.

^d *Hebrews* 3. 13. ^e *Jeremiah* 7. 4.

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Protestant Religion? Is there any *Charm* or *Enchantment* in the word *Protestant*, against a devouring Plague, or a dreadful Earthquake? And in what is the *Protestant Religion* better than any other, if we *Protestants* are not the better for our Religion; if our conduct and behaviour are not regulated by the Precepts therein contained? Can the best Religion in the World sanctify Sin, or afford it any security? No; that is an absurd and ridiculous supposition, suiting only with the opinions of some lamentable *Enthusiasts* in the time of the *Grand Rebellion*, and *Usurpation*.

Will he treat Them as *Sinners*, who perhaps are unreformed both in Doctrine and Manners; and account Us his *Saints*, who though reformed in Doctrine, are many of us, I fear, more corrupt in our *Morals*? Will not the purity of our Doctrine, rather render the corruption of our Manners the more inexcusable?

Or are we indeed reformed in Doctrine, according to the rules of *Truth* and *Soberness*? Are there not some among Us, who dispute the Being of a God covertly, if not openly? Others, who disown his Revelations, and deny the Lord that bought them? denying him to be what he is, and degrading him to the Rank of a Creature? Are there not too many among Us, who have reformed away all reverence for God's Holy Name, and Word, and Sacraments? Who have set at nought the *Christian Ordinances*, not allowing them to have any Spiritual Efficacy. Are there not others, who profane and contemn God's Holy Worship; and others, who most shamefully neglect, if not profane, the very Day which he
has

has set apart for his own immediate Service? Are there not too many nominal *Protestants* among us, who scarce deserve the name of *Christians*, who hardly believe one Article of the *Christian* Faith; who make a Mock even at God's solemn Institutions, and are zealous in teaching others so to do?

Are there not too many, that sit in the *Scorners Chair*, who are daily and hourly cavilling at the Mysteries of our Holy Religion, starting unreasonable Doubts and Scruples in matters of Faith; and who under the specious Mask of desiring Information, will sily ask, How can this thing be conceived? How is it credible? How is it possible? Or may it not possibly be otherwise? Surely these Gentlemen never consider, how dangerous a thing it is to trifle with God, and their own Consciences, in things of such mighty Consequence. If they did, methinks, it should make them more serious, and put them in mind, how God is True, and every Man a Liar; that he is Infinite, and we Finite; that he best understands his own nature, counsel, and will; and that we can know no more of him than our imperfect state will admit, and he himself has been pleased to reveal, and discover to us: And whatever is so revealed, is proposed to our belief in the most serious and affecting manner. And if these things were well weighed in a steddy and impartial way, it would appear to be their Duty, their Interest, and their Safety, to *trust in the Lord with all their Heart*, and not lean too much upon their own understanding, (*a broken Reed*), to think soberly according as God *has dealt to every Man* the

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the measure of Faith^e, rather than to^h break through unto the Lord, to gaze and to perish.

Unless therefore we take heed to our principles, and there be a thorough reformation in this respect; how can we expect, but that ⁱ *we shall all likewise perish*; we *Protestants*, as well as the *Protestants* of Port Royal in *Jamaica*, the *Papists* of *Naples*, *Sicily*, and *Lima*; we, many of us, an unbelieving race of *Protestants*, as well as any of the *Pagans* or *Infidels*, which make near two Thirds of the *known^k World*? Have we not experienced a wonderful intermixture of Judgements and Mercies for a *series* of years, and all in vain? Have not some of our Neighbours, not many years ago, been visited by a destroying ¹ *Pestilence*, and we escaped it? Have we not often been involved in the Calamities of War, and those attended with a great expence of Blood and Treasure; and have we been at all humbled by it? Have we not, with-

^g *Romans* 12. 3. ^h *Exodus* 19. 21. ⁱ *Luke* 13. 5.

^k *Geographers* and *Historians*, dividing the World into thirty Parts, give this account of it; that but five of those are *Christian*, six *Jew* and *Mahometan*, and the remaining *nineteen* perfectly *Heathen*. See Dr. *South's* Sermon upon *Proverbs* 12. 22. vol. 1. p. 509.

¹ The Plague at *Marseilles* in *France*; which famous City was almost depopulated in the Year 1720. It is situated (as Mr. *Salmon* observes, *Modern History*, Vol. 2. in Fol. p. 464). on the *Mediterranean*, twenty miles South of *Aix*, and thirty North West of *Toulon*, being divided into the Old and New Town; the Old stands on an eminence above the Fort, the Streets whereof are narrow and dirty, and the Houses very indifferent. On the other hand, the new Town is perfectly well built, particularly the Street call'd the *Course*, which is one of the finest in *Europe*; the Houses on each Side being uniform and magnificent, and a noble Walk of Trees between them. The Cathedral is said to have been the Temple of *Diana*, and the ancientest in *France*. On the Land-side, there is one of the most beautiful Plains in the World; in which there are no less than eight hundred Country-Seats of the Citizens, with their Gardens and Vineyards, whither they retire from the Noise of the Town.

in

in these thirty years, been suffer'd to fall into the hands of our own fatal Counsels, and to pull down distress^m upon our own Heads, worse than the terrors of War; and have our Spirits been subdued by it? Are we not still too unwilling to submit to God's good Hand, though we have had some late instances of terror to reclaim us? Do we not still lean too much upon the folly of worldly Wisdom? Or have we with all our pretended zeal for Justice, ever call'd to mind what our Sins have justly deserv'd at the Hands of the Almighty? What reason have we then to think, that we shall always escape in so favourable a manner? As for the Morals of too many among us, I fear we can plead but little Merit. Some of us living in *Revelling* and *Wantonness*, others in Envy, Hatred, and Malice; some overreaching and undoing their Neighbours by notorious Frauds and Falshoods; others supplanting, and undermining them, by the slyer Arts of Diffimulation; some profaning the Name of God withⁿ dreadful Oaths, and Imprecations; whilst others are guilty of the much more heinous (though I hope, the much less common) Sin of Perjury; which Sin alone is sufficient to bring down a Judgement upon our Heads: A crime, by which not only the Fortunes and Reputations, but even the Lives of many innocent People may be endanger'd. And to such I beg leave to recommend the advice of a late^o excellent Divine of our

^m *South-Sea Scheme*, 1720.

ⁿ Common Swearing, is so ungentle, so untempting, so unbecoming a Vice, and so incapable of excuse or extenuation, that I hope it will meet with but very few Advocates.

^o Dean *Mosi's* Sermon against profane Swearing and Cursing, vol. 4. p. 98. 2d edit.

Church; whose Reasoning will not, I should think, lull them into security, but convince them, that they cannot acquit themselves from this dreadful crime, by the help of any strain'd Interpretations, subtle Evasions, or Equivocations whatsoever; for in this case, a Man's subtilty will be an aggravation of his guilt. For it is a double piece of Insincerity in any one, to falsify a *solemn Oath*, and then to abuse his own Reason and Conscience by weak Sophistry and thin Artifice; a practice borrowed from the pretended *Saints* of 1641. And I wish the characters of too many among us did not so nearly resemble that of the *Romans*, so fully described by Saint ^P *Paul*.

Nay, alas! are not even the very best of us full of blemishes and imperfections? Are not the generality of us at least too intent upon this World, and too much in love with its *Vanities*? which are usually attended with *vexation of Spirit*. Are we not often carried away with the stream of popular Vogue, and common Custom, to the detriment of strict Vertue and Piety? Are we not too remiss and indifferent about the affairs of Religion, too negligent and disregardful of the great concern of all, *the Salvation of our own Souls*?

This being a true, but superficial sketch of our national sins; what should step in between us and Ruin? what should shelter us from God's hottest displeasure? If we are not moved to repentance by the late Warnings given us, nor by the dreadful *Murrain* amongst our Cattle, which for a considerable time has eluded all the arts and remedies made use of to stop it; have we

^P *Rom.* 1, 28, &c.

not too just reason to fear, one of the most dreadful scourges of Heaven, a *Plague* or *Pestilence*, which has but too often succeeded an Earthquake? *Quercetan* mentions several instances of this kind: One that happen'd in the 217th year after the building of ^a *Rome*: A second in the Reign of the Emperor ^r *Vespasian*, in which ten thousand Persons died in a day in the City of *Rome*.

Diembroeck (who endeavours to account for it from noxious vapours and ^b *steams*) mentions two instances, one from *Platina* in the year 1232, and

^a Anno verò 217 urbis conditæ, M. Cornelio Megalinenſi, & L. Papinio Craſſo, conſulibus, ingens Terræ motus, maximæ ſubſequenturæ Peſtis fuit nuntius. *Peſtis Alexiæ*. à Joſ. Quercetano, Edit. Paris, 1608. p. 97.

^r Anno primo regni *Veſpaſiani* (quo & *Capitolium Romanum* incendio vaſtatum eſt) tres inſigniores urbes in regno *Cypri* terræ motu ſubverſæ, univerſæ *Italiæ* Peſtem maximam præceſſerunt, ita ut, *Eusebio* teſte, *Romæ* quotidie decem hominum morerentur millia. *Id. ib.*

^b Externæ quoque evaporationes, exhalationes, putridosque vapores peſtilentes, & venenatos eſſe, imprimis demonſtrare dicunt *latrinas* & antiquas cloacas; è quibus apertis tam exitioſi halitus exſpirant, qui proximos ſtatim interimant, quod quotidianâ experientiâ compertum habemus. Et *Guinerius* de *Peſte*, cap. 1. ſcribit, in *Campania* puteo quodam antiquo, diutiſſime claſſo, & tandem aperto, tam venenatum halitum exſpiſſaſſe, quo aſtantes ſubito perempti ſunt. Ita quoque notiſſimum eſſe aiunt, poſt Terræ motus non raro ex Terræ motibus ades putridum venenolum halitum exſpirare, qui Peſtes furioſiſſimas inducat; qualem *Platina* refert contigſſe Anno 1232, *Georgius Agricola* Anno 1360. *Diembroeck* de *Peſte*, Lib. 1. cap. 8. p. 29.

"The *Black Affixe* at *Oxford*, held in the Year 1577, will never be forgot; at which the Judges, Gentry, and almoſt all that were preſent, to the Number of three hundred, were kill'd by a poiſonous *Steam*, thought by ſome to have broken forth from the Earth; but by a noble and great *Philosopher* more juſtly ſuppoſed to have been brought by the Priſoners out of the Goal into Court; it being obſerved, that they alone were not injured by it." Dr. *Mead's* *Diſcourſe concerning Peſtilential Contagion*, p. 111. From *Camden's* *Annals* of Queen *Elizabeth*; and Lord *Verulam's* *Natural Hiſtory*, Cent. 10. Numb. 194.

the other from *Agricola* in 1360. And^v *Quercetan* gives another remarkable instance of an Earthquake which happen'd in *France* the first of *March* 1584, which he seems to ascribe to the conjunction of those two Planets *Saturn* and *Jupiter*; and which was attended not long after by both a *Famine*, and a *Pestilence*. And if God for our Sins should think fit to send so severe a Judgement amongst us, what human precaution, what preservation of art could be sufficient to protect us against so cruel a Malady? * Since the most learned Physicians are puzzled to trace the original Cause of a *Pestilential Contagion*, or to account for its speedy conveyance and propagation; Methinks, it should teach us all to mingle the *Fear of God* with our *Philosophy*, and to dread it as one of his severest Judgements. In such Calamities the righteous are too

" Occurrit in presentia memoria illius conjunctionis duorum supremorum Planetarum, *Saturni* videlicet & *Jovis*, factæ 1584 prima *Martii*, idque die Dominica, hora duodecima; quam continuo excepit *Terræ motus*. — Fecit hujus *Terræ motus* (in *Gallia*) mentionem *Leovicius*, Lib. 4. *Magni mei Speculi Mundani*. Paucis verò post annis, tanta pariter *Fames* ac *Pestis* in diversis climatibus ac regionibus mortales invaserunt, ut nihil sub *Sole* miserabilius conspici potuerit. *Quercetani Pestis Alexiac.* p. 122.

" Quanta enim mentis consternatione videas, Peste domum seu familiam aliquam infestante, Parvulos, quorum spes omnis à Majoribus dependet, deferi; Filios à Parentibus, Parentes à Filiis, Uxores à Maritis, & Maritos ab Uxoribus: Idque tantâ animorum exolutione, (cui propellendæ ne ipsa quidem ars medica æquivalens adhuc reperit remedium) ut vel ex ipsorum Medicorum genere, nulli aut sane paucissimi reperiantur, qui non hujus *Mægeræ* inexorabilem tyrannidem remis velisque omnibus, ut aiunt, fugiant; quæ sæpe ex *Oriente* in *Occidentem*, è *Septentrione* in *Meridiem* mira se recipit, & omnes circum regiones populatur velocitate. Quæque clanculum, dum nos maxime liberos ab ejus incurfionibus credimus, à tergo adoriens, sine discrimine non modo ætate provectiores, sed & juniores viros & fæminas abripit: ac non solum populosissimas civitates, verum & integra regna, sæpe momento in solitudines ac deserta transmutat. *Quercetani Pestis Alexiac.* p. 103, 104.

frequently involv'd with the wicked : For good and bad Men are so intermix'd in this World, that there can scarce be any *Discrimination* made between them in such a case, without a continual intervention of that *Providence*, who maketh *his Sun to arise on the Evil and the Good, and sendeth his Rain on the Just and Unjust.* *Matt. 5. 45.* And the righteous can scarce be exempted from the common Lot with the wicked, without disturbing the Nature, Course, and Order of Things. And* though God has been so merciful, as not to visit

* Mr. *Nathaniel Vincent*, who lived at that Time in the City of *London*, and charitably attended the Sick, gives the following Account of the Plague of 1665, in his Treatise, call'd *God's Terrible Voice in the City.* (See Dr. *Calamy's Continuation* of his *Abridgement of Baxter's Life*, p. 33.) " It was in *Holland* in 1664, and the same Year began in some remote Parts of this Land, though the weekly Bills of the City took notice but of three that then died there of that Disease. In the beginning of *May* 1665, nine died of it in the heart of the City, and eight in the Suburbs. The next Week the Bill fell from nine to three. In the next Week it mounted from three to fourteen, in the next to seventeen, in the next to forty three. In *June*, the number increas'd from forty three to One hundred and twelve, the next Week to One hundred and sixty eight, the next to Two hundred sixty seven, the next to Four hundred and seventy. In the first Week of *July*, the number arose to Seven hundred twenty five, the next Week to One thousand and eighty nine, the next to One thousand eight hundred and forty three, the next to Two thousand and ten. In the first Week in *August*, the number amounted to Two thousand eight hundred and seventeen, the next to Three thousand eight hundred and eighty, the next to Four thousand two hundred and thirty seven, the next to Six thousand one hundred and two. In *September*, a decrease of the Distemper was hoped for; but it was not yet come to its height: For in the first Week there died of it Six thousand nine hundred and eighty eight; and though in the second Week the number abated to Six thousand five hundred and forty four; yet in the third Week it arose to Seven thousand one hundred and sixty five, which was the highest; and then of the One hundred and thirty Parishes about the City, there were but four which were not infected; and in those, there were but few People remaining, that were not gone into the Country. In the fourth Week of *September*, there was a decrease to Five thousand five hundred and thirty eight. In the first Week of *October*, there

visit us in this manner for the space of 85 years, (when in the City of *London* no less than Sixty eight Thousand five Hundred and ninety six died in little more than half a year;) Yet why should not we take the late Earthquakes, and present Murrain, as forerunners of something of much more direful Consequence? And if this should happen, (which I pray God avert) where are the *Noabs*, the *Daniels*, and the *Jobs*, God's eminent Saints and Servants, the choice Favourites of Heaven, who should turn away God's Fury from such a Land and People? Shall the good, (for with merciful Allowances many good People there are amidst this grand Corruption and Degeneracy;) shall they, if they were really much better than they are, be able to *deliver more than their own Souls*? Let us lay these Things seriously to heart; let us consider in due time, and no longer presume upon God's much injured Patience. Let us not cover our sins with the Veil of Hypocrisy, but determine upon an immediate Amendment. Let us, in imitation of some of our *Pious Ancestors* upon a like ^z occasion, deprecate God's Vengeance by a daily

there was a farther decrease to Four thousand nine hundred and twenty nine, in the next to Four thousand three hundred and twenty seven, the next to Two thousand six hundred and sixty five, the next to One thousand four hundred and twenty one, and the next to One thousand and thirty one. The first Week in *November*, there was an increase to One thousand four hundred and fourteen; but it fell the Week after to One thousand and fifty, and the Week after to Six hundred and fifty two, and so lessen'd more and more to the end of the Year. And the whole number of those that were reckoned to die of the Plague in *London* this Year, was *Sixty eight thousand five hundred and ninety six*.

^y *Ezekiel* 14. 14, 20.

^z Upon the dreadful Earthquake which happened in this Kingdom the sixth of *April* in the Year 1580, Dr. *Grindal*, then Lord Archbishop of *Canterbury*, drew up a form of Prayer to be used in the

daily or weekly humiliation of our own Souls. Let us follow the admirable advice, lately given by a learned and worthy Prelate of our Church the Peculiars of *London*, upon Wednesdays and Fridays; which form was approv'd by the *Privy Council*, and enjoyn'd by them to be read in all the other Dioces of the Kingdom. [See his Life by *Mr. Strype* p. 298.] Dr. *Aylmer*, then Lord Bishop of *London*, likewise compos'd one for his own Diocese. [Bishop *Aylmer's* Life, by *Mr. Strype*, p. 79.] And a *Godly Admonition* was at the same time set forth by Authority to be read as an *Homily* on Wednesdays and Fridays; in which were the following Words. "Who complaineth not of Corruption in Officers, yea even in Officers of Justice, and Ministers of the Law? Is it not a common By-word, that as a Man is friended, so is the Law ended? In Youth there was never the like Looseness and untimely Liberty, nor in Age the like Unsteadiness and want of Discretion, nor the like Carelessness of Duty towards Others. Men have taken up the garish Attire and nice Behaviour of Women; and Women, transform'd from their Kind, have gotten the Apparel of Men; and as to honest, and modest Shamefacedness, the preferer of all Virtues, it is so highly misliked, that it is thought of some Folks, scarce tolerable in Children. Hatred, Malice, Disdain, and Revenge for the weight of a Feather, are the Virtues of our young Gentlemen, in commendation of their Manhood, and Valiantness: Deep Dissimulation and Flattery are accounted courtly Behaviour, and Might overcomes Right, and Truth is trodden under foot: Idleness and Pride bring daily infinite Numbers to that point, that they had rather rob, and be shamefully hang'd, than labour and live with Honesty. Usury, the consumer of private Estates, and the confounder of *Common Weals*, is become a common, (and in some Mens opinion a commendable) Trade. To live by Faithfulness is fled in Exile, and Falshood vaunteth himself in his Place; till he hath gotten great Sums of Money into his Hand, that he may pay the Bankrout, to the undoing of such as trust him. The Sabbath-Days and Holidays, ordain'd for the hearing of God's Word to the Reformation of our Lives, for the administration and receiving of the Sacraments to our comfort, for the seeking of all Things behooful to Body and Soul at God's Hand by Prayer, for the being mindful of his Benefits, and to yield Praise and Thanks to him for the same, and finally for the special occupying ourselves in all Spiritual Exercises, is spent full *Heathenishly*, in *Taverning*, *Tipling*, *Gaming*, playing, and beholding of *Bear-baitings* and *Stage Plays*, to the utter Dishonour of God, Impeachment of all Godliness, and unnecessary consuming of Mens substances, which ought to be better employ'd. The want of orderly Discipline, and *Catechizing*, hath either sent great Numbers, both old and young, back again to *Papistry*, or let them run loose into godless *Atheism*." *Strype's Annals of the Reformation*, vol. 2. p. 668.

to his own Diocese,* (but calculated for the use and benefit of the whole Nation:) Let us seriously regard his Pathetic Exhortations to repentance, which breath forth the true Spirit of a Primitive Bishop: His Reasoning is so strong and cogent, that I should imagine, there is not the least room left for Cavil, or Objection from any *Quarter whatsoever*. And though his admirable *Discourses, concerning the* ^a *Use and Intent of Prophecy*, have lately

* Bishop of London's Letter, occasioned by the late Earthquakes.

^a What the real Sentiments of that late admirable Divine, Dr. Moss, Dean of Ely, were, concerning this Book, the following Lines may convince us:

In doctissimi SHERLOCCEI Librum nuper editum, *De Usu ac Fine*
Doni Prophetici, necnon prædictionum maximè memorabilium per
continuatam ab initio usque seculorum seriem.

SHERLOCCE, macte sis eximiis dotibus!
Est ingeni tibi vis ignea, & enthea;
Vel es Propheta, vel Prophetae proximus,
Et particeps Consilii, & Interpres Sacri;
Res abditas tam familiariter aperis,
Dilucidis verbis Res tenebrosissimas;
Ratione cogis, ut credam Mysteriis;
Ut Christianus sim, non suades sed adigis;
Cur Christianus sim, ita monstras planissime.
SHERLOCCE, macte sis eximiis dotibus!
Nec digna te speres, ut mos est Seculi,
Honoris & pretium, laturum hic præmia;
Tanta Indoles (nec fas) vulgare nil sapit;
Mortale nil spirat, sed longè transvolat;
Scientiæ Interpres certè prophetica,
Meretur & feret Prophetae præmium.
Procul relictis terrenis honoribus,
Ad altiora pertendens & ardua,
Lucem perenni è Fonte Lucis hauriet,
Atque inde totus Gloriâ circumfluet,
Et sempiternis gaudiis augebitur.
Hæc una merces est eximiis dotibus,
Quæ cælitus datæ petunt cælestia.
Utenda quæ rectè, fruenda quæ dedit,
Et sua remunerat Deusque munera.

R. M. Anno Ætatis 59, Christi 1726.

See General Historical Dictionary, Vol. 7. p.687.

been

been animadverted upon in a very severe manner; I must beg leave to dissent from the very learned Animadverter, (for whom I have the highest personal Regard;) and to believe, notwithstanding, that no Book has been publish'd within the Compass of many Centuries, by which the Proof of the *Christian Religion* has been put upon a more sure and solid Foundation.

As a Woe is denounc'd against them ^b *who call Evil Good, and Good Evil; that put Darknests for Light, and Light for Darknests; that put Bitter for Sweet, and Sweet for Bitter*; and as there is no room in our Case, to *speake* ^b *smooth Things*; and it is not my inclination to *propheesy Deceits*; I hope you will pardon the Freedom of this plain Address, which is not adorned with the ^c *enticing Words of Man's Wisdom*; but flows from the Heart of one, who has the most tender regard for the Good of all Mankind; and earnestly wishes and prays, that *all Men may be saved*.

^a *Isaiah* 5. 20. ^c *Isaiah* 30. 10. ^d *1 Corinth.* 2. 4.

A

Chronological and Historical Account
Of the most memorable
EARTHQUAKES.

INTRODUCTION.

Of the Nature and Cause of Earthquakes.

AN EARTHQUAKE * is a vehement Shake or Agitation of some considerable Place or Part of the Earth, from natural Causes, attended with an huge Noise, like Thunder; and frequently with an Eruption of Water, Fire, Smoak, or Wind. They are looked upon to be the greatest and most formidable *Phænomena* of Nature.

Naturalists have distinguished them into various sorts, from their Appearances: Thus *Aristotle* and *Pliny* distinguish two kinds, with respect to the manner of the Shake, *viz.* a *Tremor*, and a *Pulse*; the first Horizontal, in alternate Vibrations, like the shaking of a Person in an Ague; the second Perpendicular, up and down, like the Boiling of Water. *Albertus Magnus* mentions another sort, by *Inclination*; when the Earth vibrates alternately from right to left; by which Mountains have been sometimes brought to meet and clash against each other; a second, by *Pulsation*,

* See *Chambers's Dictionary*.

when it beats up and down like an Artery ; and a third, by *Trembling*, when it shakes and quivers every way, like a Flame.

Naturalists are much divided concerning the Causes of these Appearances ; some ascribing them to Water, others to Fire, and others to the Air ; and all of them with some reason. To conceive which, it is to be observed, that the Earth every where abounds in huge subterraneous Caverns and Canals ; particularly about the Roots of Mountains : Some of which Cavities are full of Water ; whence are composed Gulphs, Abysses, Springs, and Rivulets ; others are full of Exhalations ; while other Parts of the Earth are replete with Nitre, Sulphur, Bitumen, and Vitriol. This being premised, it may be easy to conceive, that the *Earth* itself may be the Cause of its own shaking ; when the Basis or Root of some large Mass is dissolved or wore away by a Fluid beneath, it sinks into the same, and with its Weight occasions a Tremor of the Parts adjacent, produces a Noise, and frequently an Inundation of Water. *Subterraneous Waters* also may occasion Earthquakes, either by their overflowing, or their cutting out new Courses for themselves. To which may be added, that the Water being heated and rarified by the subterraneous Fires, may emit Fumes and Blasts ; which by their Action, either on the Water, or immediately on the Earth itself, may occasion great Succussions. The *Air* likewise may be the Cause of them ; for Air being a Collection of Fumes and Vapours raised from the Earth and Water, if it be pent up in the too narrow Bowels of the Earth ; the subterraneous, or its own native Heat,

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rarifying and expanding it, the Force by which it endeavours to escape, may shake the Earth, and occasion diverse Species of Earthquakes, according to the different Position, Quantity, or Quality of the imprisoned Air.

But *Fire* is the principal and more immediate Cause of them; both as it produces the aforesaid subterraneous Air; and as this Vapour or Spirit, from the different Composition whereof arise Sulphur, Bitumen, and other inflammable Matters, is kindled either from some other Fire it meets with, or from its Collision against hard Bodies, or its intermixture with other Fluids; by which means bursting out into a greater Compass, the Place becomes too narrow for it; so that pressing against it on all sides, the adjoining Parts are shaken; till having made itself a Passage, it spends itself in a Volcano or burning Mountain.

Dr. *Lister* * is of opinion, that the material Cause of Thunder, Lightning, and Earthquakes, is one and the same, viz. the inflammable Breath of mineral *Pyrites*; which being a substantial Sulphur, takes Fire of itself: And the Difference between these three Phænomena he takes only to consist in this; that the Sulphur in the two former, is fired in the Air, and in the latter, under Ground; a Notion that *Pliny* had long ago, *Quid enim*, says he, *aliud est in Terra Tremor, quam in Nube Tonitru?* This he thinks abundantly indicated by the same sulphureous Smell being found in any thing burnt with Lightning, and in the Waters, &c. cast up in Earthquakes; and even in the Air before and after them: Besides, that they agree in

* See *Philos. Transact.* N^o 157.

the manner of the Noise ; which is carried on, as in a Train fired ; the one rolling and rattling thro' the Air, takes fire as the Vapours chance to drive ; as the other fired under Ground, in like manner, moves with a desultory Noise.

Thunder, which is the Effect of the Trembling of the Air, caused by the same Vapours dispersed thro' it, has Force enough to shake our Houses ; and why there may not be Thunder and Lightning under Ground, in some vast Repositories there, I see no reason to doubt of ; especially if we reflect, that the Matter which composes the noisy Vapour above it, is in much larger Quantities under the Earth. That the Earth abounds in Cavities, every body is convinced of ; and that these subterraneous Cavities are, at certain Times, and in certain Seasons, full of inflammable Vapours, the Damps in our Mines sufficiently evince ; which fired, do every thing as in an Earthquake, only in a lesser degree.

The Reason why our Country is so little subject to these Succussions, is the Scarcity of this sulphureous Mineral called the *Pyrites* ; which also is less impregnated with its fiery Quality with us, than in *Italy*, and many other Countries, which are more subject to them. And for this reason, if we compare the Earthquakes, Thunder, and Lightning that happen in *England*, with those that happen in the Countries bordering on the *Mediterranean* Sea ; we shall find, that there it lightens almost daily, especially in summer time, here seldom ; there Thunder and Lightning is of long duration, here it is soon over ; there Earthquakes are frequent, long, and terrible, with many
Shocks

Shocks in a day, and that for many days; here very short, a few minutes, and sometimes scarce perceptible.

Dr. *Woodward* gives another Theory of the Occasion of Earthquakes. He says, that the subterraneous Heat or Fire being stopped in any Part of the Earth by some accidental Obstruction, becomes preternaturally assembled in a greater Quantity than usual, in one Place; and so causes a great Rarefaction and Intumescence of the Water of the Abyss; putting it into great Commotions and Disorders, and at the same time making the like Effort on the Earth; which being expanded upon the Face of the Abyss, occasions that Agitation and Concussion, called an Earthquake. This Effort, he observes, is so vehement, that it splits and tears the Earth, making Cracks and Chasms in it, some Miles in length; which open at the Instant of the Shock, and close again in the Intervals betwixt them: Nay, it is sometimes so violent, that it forces the superincumbent Strata, breaks them all throughout, and thereby perfectly undermines, and ruins the Foundation of them; so that these failing, the whole Tract, so soon as the Shock is over, sinks down into the Abyss, and is swallowed up by it; the Water thereof immediately rising up, and forming a Lake in the Place where the Ground was before.

At the same time he informs us, that these Commotions are no where very remarkable, but in those Countries which are very mountainous and stony, and consequently cavernous underneath; whereas they seldom happen where the Soil is gravelly, sandy, or of the like laxer Matter, which more easily gives

gives way, and makes not so great resistance. A remarkable instance of the truth of this observation we find in the Countries of *Peru* and *Chili* in South *America*; for in that vast chain of exceeding high Mountains, which runs through those Countries, there are no less than fifteen Vulcano's; and notwithstanding the continual discharge of the internal Fire through these natural Cavities, yet there are frequent Earthquakes in that part of the world; where they make more terrible havock and destruction, than in any other Countries we have heard of; the thick Strata of Stone or Marble in the internal parts of those Mountains, making a stronger opposition to the subterraneous Fire, are more furiously shatter'd, and suffer greater damage, than looser Earth wou'd do. But above all, those Countries, which yield great store of Sulphur and Nitre, are by far the most injured and incommoded by Earthquakes; those Minerals constituting in the Earth a kind of natural Gunpowder, which taking fire upon their meeting together, occasions that murmuring noise, or subterraneous Thunder, which is heard rumbling in the Bowels of the Earth during Earthquakes; and by the assistance of its explosive power renders the Shock much greater, so as sometimes to make miserable Havock and Destruction. And on this Principle he accounts for the frequency of Earthquakes in *Italy*, *Sicily*, *Anatolia*, and some Parts of *Greece*; those Countries being all mountainous and cavernous, abounding with Stone and Marble, and affording Sulphur and Nitre in great plenty.

Ætna, *Vesuvius*, *Hecla*, and other Vulcano's, are only so many Spiracles or Vents, serving for the dis-

discharge of this subterraneous Fire, when it happens to be preternaturally assembled. And where there is such a structure and conformation of the interior parts of the Earth, as that the Fire may pass freely, and without impediment, from the Caverns where it is assembled, unto those Vents; it then readily and easily gets out from time to time, without shaking or disturbing the Earth: But where such communication is wanting, or the passage not sufficiently large and open for it to come at the Vents, it heaves up and shakes the Earth with greater or less Impetuosity, according to the quantity of Fire thus assembled, till it has made its way to the mouth of the Volcano. And it is observable, that there are scarce any Countries, which are much annoyed with Earthquakes, but have one of these fiery Vents; which are constantly in flames, when any Earthquake happens there, disgorging that Fire, which, whilst underneath, was the cause of the disaster. And were it not for these natural Vents, it would rage in the Bowels of the Earth much more furiously, and make greater havock than it doth. Add to this, that the *Thermæ*, or hot Springs, in those Countries which are subject to Earthquakes, become much hotter during those Concussions, than at other times; and they yield a far greater supply of Water, than they were wont to do; and also a murmuring Noise is usually heard, below them, in the Bowels of the Earth: All which is occasioned by the rapid Motion and Ascent of the internal Fire at such times, in greater plenty than before, to the Mouths of those Springs.

*A Chronological and Historical Account
of Earthquakes.*

THE Earthquake which happen'd at the Crucifixion of our Blessed Saviour, and was accompanied with a Total Eclipse of the Sun, as in many respects it was the most remarkable that ever happen'd, (tho' not attended with the same fatal Consequences,) I shall take the Liberty of inserting it from the *Evangelists*, for the Benefit of those *polite* Readers, who think it highly unfashionable ever to look into their Bibles. —
—^a And behold, the Veil of the Temple was rent in twain, from the top to the bottom; and the Earth did quake, and the Rocks rent; and the Graves were opened, and many Bodies of the Saints which slept arose, and came out of the Graves after his Resurrection, and went into the Holy City, and appeared unto many. Saint Luke adds, ^b And it was about the sixth Hour, and there was Darkness over all the Earth until the ninth Hour: and the Sun was darkened, &c.

Pliny the Elder ^c, who lived in the time of the Emperors *Vespasian*, and his Son *Titus*, and was author of the *Natural History*, whilst he was exploring the cause of the Burning of the Mount *Vesuvius*, perish'd himself in the dreadful Flames of that Place, in the year of our Lord 79.

^a *Matth.* 27. 51, 52, 53.

^b *Luke* 23. 44, 45.

^c *Plinii Epist.* Lib. 3. *Epist.* 5. Lib. 6. *Ep.* 16.

In the year 107, ^b Four Cities in *Asia*, Two in *Greece*, and Three in *Galatia* were overwhelm'd by an Earthquake.

In the year 115, ^c the Emperor *Trajan* wintering at *Antioch*, the City was overthrown by an Earthquake. *Pedo* the Consul perished in it, and *Trajan* saved himself by escaping through a window.

Funccius tells us in his *Chronology*, that in the year 243, ^d there was an Earthquake, in which several Cities were overwhelm'd, and the People buried in their Ruins.

In the year 358, ^e the City of *Nicomedia* in *Bitthynia*, was overturn'd by an Earthquake.

Upon *Julian's* attempt to rebuild the Temple of *Jerusalem* in the year 363, we are told, ^f that on a sudden, dreadful Balls of Fire broke out from the Ground, where the Foundations were laid, and consuming the Workmen, made the place inaccessible.

In the same year, ^g there happen'd an Earthquake at *Jerusalem*, which rased the Foundations of the former Temple, and over-turn'd several Publick Buildings, under which a great multitude of *Jews* lay buried: And another ^h at *Constantinople*, which, though not so violent, endanger'd a great part of the City.

^b *Funccii Chronolog.* p. 95.

^c *Isaacson's Chronology.* fol. 193.

^d *Funccii Chronolog.* fol. 103. A.

^e *Ammiani Marcellini.* lib. 17. p. 97.

^f *Ammiani Marcellini Rer. Gestar.* lib. 23. edit. Paris. 1636.

Nicephori Callisti Histor. lib. x. cap. 33.

^g *Scot's Continuation of Echard's Roman History*, vol. 3. p. 77.

^h *Ammiani Marcellin. Rer. Gestar.* lib. 23. p. 238. *Nicephori Callisti Ecclesiastica Histor.* lib. 10. cap. 33. p. 76. *Scot's Continuation of Echard*, vol. 2. p. 77.

In the year 369, ^l in the reign of the Emperor *Valentinian*, the Earth quaked all over the World; and the Sea rose to so great a height, that it pass'd it's bounds in many places, and destroy'd many Cities.

In the year 370, ^m the City of *Nice* was thrown down, and buried by an Earthquake.

In the year 377, ⁿ was a general Earthquake, which affected the greatest part of the World.

In the year 400, ^o were Five Earthquakes, at which times the Heavens seem'd to be in a flame.

In the year 434, ^p there was a terrible Earthquake at *Constantinople*, which lasted near four months.

Gesselius ^q mentions another in the year 446, which continued six months in all the *Roman Provinces*, in which *Constantinople*, *Alexandria*, and *Antioch* suffer'd very much, and the effects of it were felt at Sea.

In the Year 458, ^r There was a great Earthquake in *Antioch*, in *Thrace*, the *Hellepont*, *Ionia*, and the Islands of the *Cyclades*.

^l *Higden's Polychronicon*, translated by *Trewiza*, and printed by *Treueris*. fol. 175. *Stow's Chronicle* publish'd by *Howes* 1631, p. 46.

^m *Stow's Chronicle*, p. 46.

ⁿ *Alstedii Thesaur. Chronologic.* p. 504.

^o *Fucci Chronolog.* fol. cxi. B.

^p *Fascicul. Temporum*, Edit. 1518. fol. 51.

^q A. C. 446. Immanis per universum fere *Romanum orbem* sex Menses Terræ motus, quo concutuntur *Constantinopolis*, *Alexandria*, *Antiochia*, nec Terrâ tantum sed et Mari. *Gesseli Histor. Sacra et Ecclesiastica*, tom. 1. p. 615.

^r *Isaacson's Chronology*, (from *Evagrius* and *Nicephorus*) p. 231. vid. *Nicephori Hist. Ecclesiastic.* lib. 15. cap. 20. p. 618.

In the year 472, Mount *Vesuvius*^{*} in *Italy* burnt very much, and cast its ashes many Miles, not only about that Country, but into far distant Regions.

In the year 541,[†] half the City of *Pompeiopolis* in *Mysia* was swallow'd up.

In the year 544,[‡] There was an universal Earthquake.

In the year 557,[§] there was a great Earthquake at *Constantinople* and *Rome*.

In the year 560,^{||} was an Earthquake, in which the City of *Beritus* fell, and the Island of *Coos* was terribly shaken. *Nicephorus* speaking, I believe, of the same Earthquake says,[¶] that *Biblus* and *Tripolis* suffer'd great damage by this Earthquake.

In the year 581,^{**} in the third year of the Emperor *Tiberius* the Second, was a most dreadful

* Mount *Vesuvius* (according to Mr. *Salmon*) is situated 6 Miles East of the City of *Naples* in *Italy*. Within a Mile and half of the top it is covered so thick with the Ashes of the burnt Earth, and goes so steep, that it is very difficult ascending it. From this Mount there have been several terrible Eruptions in the present Age. In April 1694, the Mountain was on fire great part of the Month, and threw out burning matter with that force, that some of it fell at 30 Miles distance; and a vast quantity of melted Minerals, mixed with other Matter, ran down like a River for three Miles, carrying every thing before it which lay in its way. In the year 1707, when they were rejoicing for the success of the *Imperialists*, they were interrupted by a dreadful Eruption from the Mount *Vesuvius*, such quantities of Cinders and Ashes being thrown out, that it was dark at *Naples* at Noon-day; and they are frequently alarmed with Earthquakes when the Fire issues from this Mount.

† *Isaacson's Chronology*. p. 243. ‡ *Funccii Chronolog.* fol. 118.

§ *Isaacson's Chronology*. p. 245.

|| *Terræ motu Beryto civitas corruit, et Coi Insulæ concussæ. Funccii Chronol.* fol. 119. D.

¶ *Nicephori Callisti Histor. Ecclesiastic.* lib. 17. cap. 22. p. 769.

** *Nicephori Callisti Ecclesiast. Hist.* lib. 18. cap. 3. p. 811. *Nicephorus* mentions another remarkable Earthquake, which happen'd not long after this in *Antioch*, lib. 18. cap. 13. p. 825.

Earthquake in the City of *Antioch*, where both the publick Buildings and private Houses were torn up to the very Foundations: And the City of *Daphne* was overturn'd by the same.

In the year 612,^c in the month of *August*, there happen'd a great Earthquake in several parts, attended by a grievous Pestilence.

In the year 742,^d was so great an Earthquake in *Egypt*, and other parts, that many Cities buried the Inhabitants in their ruins; and many Ships were cast away: It went through all the East, and in one night ruined six hundred Cities, and kill'd Men and Beasts out of number.

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In the year 746,^e there was a terrible Earthquake in *Palæstine* and *Syria*; in which many thousands lost their Lives, and Churches and Monasteries fell to the ground.

In the year 860^f "faith *Purchas*, were terrible Earthquakes, which destroyed Forty-five thousand Men, most of them in *Damiis*. In *Persia*, also *Chorasan*, and *Syria*, Earthquakes, and unusual Sounds happen'd, and in *Aliaman*, with great Destruction.

In the year 867,^g were Earthquakes, and the Springs of *Mecca* fail'd so that a Bottle of Water was sold for a hundred Staters. Many were destroyed by an Earthquake at *Antiochia*, and Fifteen hundred Houses and Ninety Towers of the Wall fell thereby. Many people ran into the

^c *Stow's Chronicle*, p. 56.

^d *Purchas his Pilgrim*. publish'd 1626. p. 1025. from the History of the *Saracens*.

^e *Gessellii Histor. Sacra et Ecclesiastic.* tom. 2. p. 15.

^f *Purchas*. p. 1031. ^g *Id. ib.*

^g *Isaacson's Chronology*. p. 301.

Fields, and *Acraus* the Hill there fell into the Sea, a black and unfavoury Smoke ascending thence."

In the year 986,^e was so great an Earthquake, that not only the Walls and Churches of *Constantinople* were overthrown, but all *Greece* was shaken with it.

In the year 1021,^h was a dreadful Earthquake in *Bavaria*.

In the Holydays in *Christmasts*, 1112,ⁱ there was an Earthquake, such as had rarely been heard of; in which many Churches and Cities were destroy'd; and the famous City of *Liege* by the over-flowing of the Waters was drown'd. In the same year the Town of *Rottenburg* upon the *Neccar*, in *Swedeland*, was wholly destroy'd; and rebuilt again by *Albert* Count of *Hohenberg*, in the year 1271.

"In the year 1114,^k there were two Earthquakes, one so great in the Region of *Antiochia*, that many Towns were half or wholly ruin'd, throwing down the Walls and the Houses, and killing the People; over-turning the Castle *Trialetb* near to *Euphrates*; *Mariseum* with the Walls, Houses, and People was extinct; a great part of *Mamistria* fell."

In the year 1117,^l was an Earthquake in *Lombardy*, which continued forty days, and overthrew many

^a *Funccii Chronolog.* fol. 142. C.

ⁱ *Naucleri Chronographia.* vol. 2. p. 816.

^k *Purchas's Pilgrim.* vol. 2. p. 1208.

^l *Apud Longobardum magno terræ motu facto, et ut testati sunt qui novere, XL dierum Spatio durante. Plurima domorum ædificia corruere; et quod visu dictuque constat mirabile, villa quædam pergrandis mota est repente de statu proprio: jamque ab omnibus*
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many Houses; and what was more remarkable, a Town was removed from its former situation, and carried a great way off.

In the year 1159,^m the Cities of *Antioch*, *Tripoli*, and *Damascus*, with many other places, were overturned by an Earthquake; and the City of *Chatena* near the *Red Sea* was overthrown; and Twenty thousand Persons in *Sicily* were drowned.

In the year 1170,ⁿ were great Earthquakes in *Hungary*.

In the year 1186,^o was a terrible Earthquake in *Calabria* in *Sicily*, in which the Archbishop of *Cosenza*, with his Clergy, and the greatest part of the Inhabitants were destroyed: And a City adjoining to the *Adriatic Sea*, was swallowed up with all its Inhabitants.

In the year 1187,^p in *Verona* a City in *Lombardy*, was so terrible an Earthquake, (preceeded by a total Eclipse of the Sun) that the Inhabitants

in longe remoto consistere cernitur loco. *Simeonis Dunelmensis Hist. de Gestis Regum Anglorum. Histor. Anglican. x. Scriptor. Col. 238. Matthæi Paris Hist. Angliæ. Edit. 1571. p. 79.*

^m *Chronicon Johannis Bromton. Histor. Anglican. X. Scriptor. Col. 1049. Purchase* makes mention of as dreadful an Earthquake in the same places in the year 1170. Vol. 2. p. 215.

ⁿ *Funccii Chronolog. Fol. 149. B.*

^o *Herbertus Anglicus* — Transitum faciens in Siciliam, assensu Regis *Willielmi* creatus est in *Calabria* *Consensanus* Archiepiscopus: cum autem illic Terræ motus fieret magnus, prædictus Archiepiscopus cum clero, cum familiâ, cum magnâ parte civium obrutus est: castella pleraque subversa, millia populorum contrita; quedam civitas *Adriatico mari* contigua, de nocte populo quiescente, corruit in profundum. *Ymagine Historiar. Radulphi de Diceto. Vid. Scriptor. Histor. Anglican. x. Col. 628.*

^p Apud *Veronam* anno 1187. *Longobardiæ* civitatem, — apparuit *Eclipsis* Totalis, ad modum cacabi igniti; omnibus itaque qui viderunt obstupentibus factus est Terræ motus adeo terribilis, ut omnia fundamenta civitatis Solo tenus erui viderentur. *Chronicon Geruassii Dorobernens. Vid. Scriptor. Hist. Anglican. X. Col. 1505.*

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in their consternation thought the Foundations of the Buildings seem'd to be loosened. The shock was felt in *England*, where *Matthew Paris* observes, ' Earthquakes seldom happen.

In the year 1222,^r in some Parts of *Europe* was an Earthquake, in which some Cities were overthrown, and the Inhabitants buried in the Ruins; and amongst the rest a Town in *Lombardy* called *Brisa*, where in the night of our *Saviour's Nativity*, the greatest part of it with its Churches were thrown down, and almost 2000 of its Inhabitants buried in its Ruins.

In the year 1346,^s was a dreadful Earthquake in *Germany*, in which many villages were overthrown, and Towers demolished; attended with other remarkable circumstances.

In the year 1456,^t there was so great an Earthquake in *Naples*, that there perished Forty Thousand People in the Ruins of that City.

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* *Matthæi Paris Histor. Angliæ.* Edit. 1571. p. 193. Factus est his diebus per orbem universum Terræ motus magnus, et horribilis, ita ut etiam in *Anglia*, ubi raro contigit, multa ædificia subverterentur.

^r 1222. Fuit eodem anno Terræ motus magnus multis in locis in transmarinis partibus, ex quo urbes aliquæ subrutæ sunt funditus, cum hominibus in illis degentibus. Inter quas erat quædam urbs in *Longobardia* nomine *Brisa*, ex qua pars maxima in nocte Natalis Domini subversa est, cum Ecclesiis, ubi quoque periire fere duo millia Hominum. *Annal. de Margau. Hist. Anglican. Script. Quinque.* Vol. 2. p. 16. Vid. *Annal. Waverleiens.* Id. ib. p. 147.

^s Terræ motus ingens in Die Conversionis sancti *Pauli* anno Christi 1346, *Germaniam* quassavit, pagi et arces multæ corruere. *Funccii Chronolog.* Fol. 158. A.

^t *Higden's Polychronicon.* Lib. ult. cap. 28. Folio. cccxliii. — *Naples*, the Capital of the Kingdom of *Naples*, in *Italy*, (says Mr. *Salmon*) is seven Miles in circumference within the Walls, and as much more if the Suburbs are included, and contains a great Number of Inhabitants. It stands on an Eminence, rising gradually from the Sea to a moderate height, on a fine Bay of the Sea of Thirty Miles diameter. — On the East is a large Plain, on the further

In the year 1510,^u was a great Earthquake in *Italy*.

“ In the River and Coast of *Cumana* (near the Island *Cubagua* in the *West Indies*) in the year 1530,^x saith *Purchas*, the first of September, the Coast being clear, the Sea did rise four Fathoms from his ordinary course, and entering into the Earth, it began to shake; and the Fortrefs, which the Captain *Jacome* of *Castillon* had built by order of the Council of *Hispaniola*, fell; and the Earth did open in many places, whereout sprang much Salt Water as black as Ink, and did stink of Brimstone; and the Mountain of the Gulf of *Cariaco* remained open with a great rift; many Houses fell, many People died, drowned, and with fear, and taken with the Earthquake.”

“ *Gasper de Cruz*, saith *Purchas*, reciteth a^z letter of the *Mandarines* to the King 1556, containing News of a Terrible Earthquake in the Provinces of *Sanxi* and *Santon* (in *China*,) wherein the day waxed dark. The Earth opened the year before in many places, under which was heard the Noise as it were of Bells; there followed Wind and Rain. The Wind, which they call

ther side whereof is Mount *Vesuvius*; and on the West a high Hill, on which stands the Castle of *St. Elmo* and a *Carthusian* Monastery, from whence there is the finest Prospect in the World. The Air is pure, serene and healthful; the Buildings are magnificent and elegant, and inhabited by People of Distinction; nor can there be in all respects a more delightful Situation, did not the Eruptions of Mount *Vesuvius*, and Earthquakes, sometimes disturb their quiet, &c.

^u *Funcii Chronologia*, Folio 166. A.

^x *Herera's* description of the *West Indies*. *Purchas's Pilgrim*, third part, p. 868.

^z See *Purchas's Pilgrimage*, published 1626. p. 459.

Tufan, is so violent, that it driveth Ships on the Land, overthroweth Men and Houses.—In *Vin-yansu*, the Earthquake caused the Fire to break out, which consumed all the City, and innumerable People: The like happened to another City near it, where none escaped. It caused the River at *Leuchimen* to increase, and drown multitudes. At *Hien* the Fall of the Houses slew Eight Thousand: In *Puchio* the House of the Kings Kinsmen fell, and slew all therein but a Child. *Cochu*, with Fire from above, and Waters from beneath, was left desolate. At *Enchinoen*, almost an Hundred thousand perished. At *Inchumen* the River ebbed and flowed ten times in a Day and Night. This perhaps was the same with that, which *Georgius* and *Boterus* mention.”

“ There have happened Earthquakes in *Peru*^a, which run from *Chili* unto *Quito*, and that is above a hundred Leagues. Upon the Coast of *Chili* (I remember not well in what year) there was so terrible an Earthquake that it overturned whole Mountains, and thereby stopped the Course of Rivers, which it converted into Lakes; it beat down Towns, and destroy'd a great number of People, causing the Sea to leave its place for some Leagues, so as the Ships remained on dry Ground far from the ordinary Road, with many other heavy and memorable things; and as I well remember, they say this Trouble and Motion caused by the Earthquake, ran Three hundred Leagues along the Coast.”

^a *Acosta's Natural and Moral History of the East and West Indies*, translated from the *Spanish* by E.G. 1604. book 3, chap. 26.

“ In the year 1581,^a in *Cugiano* a City in *Peru*, there happened a strange accident touching this subject ; a Village called *Arigoango*, (where many *Indians* dwelt who were Sorcerers and Idolaters) fell suddenly to ruin, so as a great part thereof was raised up and carried away, and many of the *Indians* smothered ; and that which seems incredible, (yet testified by Men of Credit) the Earth that was ruined, and so beaten down, did run and slide upon the Land by the space of a League and a half, as if it had been Water or Wax molten, so as it stopped and filled up a Lake, and remained so spread over the whole Country.”

“ Soon after, in the year 1582,^b happened that Earthquake of *Arequipa* (in *Peru*), which in a manner overthrew the whole City. Since, in the year 1586, on the ninth of *July*, fell another Earthquake in the City of *Kings*, which, as the *Viceroy* did write, had run a Hundred threescore and ten Leagues along the Coast, and overthwart in the *Sierre* Fifty Leagues. The Mercy of the Lord was great in this Earthquake, to forewarn the People, who heard a great Noise a little before the Earthquake, and taught by former Experiences, presently put themselves in safety, leaving their Houses, the Streets and Gardens, to go into the Fields ; so as although it ruined a great part of the City, and the chief of their Buildings, yet there perish'd not above Fifteen or Twenty Persons of all the Inhabitants. It caused the like Trouble and Motion at Sea, as it had done at *Chili*, which happened presently after the Earthquake, so as they

might see the Sea furiously to fly out of its Bounds, and to run near two Leagues into the Land, rising above fourteen Fathom : It covered all that Plain, so as the Pieces of Wood that were there swam in Water. There was yet another Earthquake in the Realm and City of *Quitto* ; and it seems all these notable Earthquakes upon that Coast, have succeeded one another by order, as in truth it is subject to these Inconveniencies."

In the year 1590^c, was a great Earthquake at *Vienna*, in *Bohemia*, *Moravia*, and *Hungary*.

" On *July 22*, in the year 1596^d, it rained Ashes about *Meaco*, (in *Japan*) covering the Ground as it had been Snow : Soon after, it rained both there and in other places Red Sand, and after that as it had been Women's Hair ; and not long after followed an Earthquake that hurled down Temples and Palaces, (wherein *Taicofama* had then newly employed Night and Day an Hundred thousand Workmen to his exceeding Cost, and their intolerable Slavery) which with their Ruins destroyed Thousands : Six hundred gilded Images in the Temple of *Jan-suzangus*, were cast down and broken in pieces, as many remaining whole. It brought up the Sea a great way upon the Main Land, which it carried back with it into the Sea ; not leaving mention that there had been Land. So was the City *Ocbinosama* swallowed : *Famaoqui*, *Ecuro*, *Fingo*, *Cascicanaro*, the neighbour Towns, at-

^c *Funcii Chronol.* Fol. 173. E.

^d *Purchas's Pilgrimage* published 1626, Book 5. Chap. 6. pag. 599. Where he gives an account of a terrible Earthquake in *Nogafama* in the same Kingdom, in the year 1586.

tended her in the new Voyage and became Sea, the Ships in the Haven found no more security but were all drowned."

"In the year 1600^e, there was a great Earthquake at *Arequipa* (in *Peru*); in which there was a raining of Sand, as also of Ashes about twenty Days from a *Volcano* breaking forth; the Ashes falling in Places above a Yard thick, and in some Places two; and where least, above a Quarter of a Yard; which buried the Corn grounds of *Maiz*, and Wheat, and the Boughs of Trees were broken and fruitless; and the Cattle great and small died for want of Pasture. For the Sand which rained covered the Fields thirty Leagues one way, and about Forty another way round about *Arequipa*. They found their Kine dead by Five hundred together in several Herds; and whole Flocks of Sheep, and Herds of Goats and Swine buried; Houses fell with the weight of the Sand. Mighty Thunders and Lightnings were heard and seen thirty Leagues from *Arequipa*; It was so dark whilst those Showers lasted, that at Mid-day they burnt Candles to do their business."

"In the year 1621,^f there was an Earthquake at *Gonabpée* the barrenest Place in the Isles of *Banda* (in the *East Indies*) much subject to Earthquakes, which trouble the rest of the Islands, and make the Ships in the Road to totter and tremble. Since the surprisal of *Nero* by the *Dutch*, there being a fearful Earthquake, the Hill cast forth such hideous

* *Purchas's Pilgrimage*, Fourth Part. p. 1476.

^f Captain *Fitzherbert's* Letter concerning the Islands of *Banda*, &c. *Purchas's Pilgrimage*, Vol. 1. p. 697.

Flames, such store of Cinders, and huge Steams, that it destroyed, burnt, and brake down all the thick Woods, and mighty Trees, overwhelming them, so that a green Leaf could not be seen in that Island. Nor did *Nero* escape these hellish Blasts, which blew these Steams and Cinders into the Castle and Country near adjoining, in such abundance, that it invited all Men that saw it to her Funeral, burnt up all the Fruit Trees, and covered all the Country about it, and had like to have sunk the Ships in the Road. It is credibly reported by those that saw it, the violence was so great, that it carried Stones of three or four Tuns weight from the one Island to the other."

* *Kircher* mentions a terrible Earthquake which happened in *Calabria* (in *Italy*), *March* 27. 1638, where he then was. He observes, that before every Shock (many of which happen'd both by Day and Night,) he always heard prodigious Rumbling and Noise. And one Day he perceived

* *Kircheri* Mund. Subter. Lib. 4. Sec. 2. C. x. Tom. 1. pag. 240. Ego sane dum anno 1638, inauditis *Terræ Motibus*, qui *Calabriam* pene in vastitatem reducebant, interesssem, memini semper me ante imminentem *Terræ motum*, qui sæpe sæpius interdum noctuque reiterabatur, Horrendum Murmur et incredibiles fragores ad instar multorum sonitus Tympanorum percepisse. Et quodam die, dum *Strongylum* plus solito ignearum molium eructatione furere notassem; obtusum quoque nescio quod murmur ex monte 60 millibus passuum distito, audiui, quod identidem versus nos crescere videbatur, ad quos ubi pervenit, jam horrenda intra terram tonitrua edidit, ut vix sensus iis tolerandis sufficeret; cui jungebatur tam formidabilis *Terræ concussio* ut nemo pedibus amplius consistere valeret, omnibusque sociis ferocientis naturæ vi prostratis; tandemque induciis, constitutis cum surgentes oppidum *S. Euphemiæ* (a quo non nisi tribus milliaribus aberamus) ingenti nebula tectum tuemur, ea sensim evanescente, urbem nullo amplius vestigio relicto absorptum, lacu quo prius carebat in ejus loco exorto, ea animi consternatione quam vix verbis describere queam, reperimus.

it coming towards him with a terrible Bellowing, as from the Island *Strongoli*: As the Noise approach'd him and his Company, there was a dreadful Explosion, as of Thunder under Ground, attended with such frightful shaking of the Earth, that they could not stand upon their feet, but fell flat on the Ground. As soon as the Shock was over, they got up; and looking toward St. *Euphemia*, (about three Miles distant from them,) they saw nothing, but a vast black Cloud; which being dispersed, to their inexpressible Amazement they found not the least Remains of the Town, but a Lake of Water sprung up in the place where it had stood.

“ At *Manilla* one of the *Philippine* Islands, there was such a terrible Earthquake in *September* 1627,^b that it levell'd two Mountains call'd *Carvallos*. In the Province of *Cogogan* in 1645, the third part of the City was overthrown, with the slaughter of 300 Souls, and the like happen'd the next year after. The old *Indians* say, they were yet more dreadful in former times, and for fear of them, they built all Timber Houses.”

In the year 1640,ⁱ was a very great Earthquake, which begun at *Mechlin* and reach'd at least 360 Leagues.

Upon

^b *Gemelli Careri's* Voyage round the World. *Churchill's* Voyages and Travels, vol. 4. p. 427. edit. 1732, where he observes, that there are many Burning Mountains round this Island.

ⁱ Enimvero nox erat inter diem tertiam et quartam *Aprilis* Anno 1640, quadrans vero post horam tertiam a nocte media; Luna post biduum inde plena, et dies *Mercurii* ante Pascha; quando *Mechlinia* (ubi tunc eram propter causas) insigniter tremuit et subsiliit, tribus repetitum accessibus; singulaque invasione tremor duravit paulo minus quam esset spatium *Symboli Apostolorum*. Accessum vero

Upon Saint *Philip* and *Jacob's* day (says *Navarette*) in the year 1653,^k "I was hearing Confessions in the Chapel of *Sant Iago* or *S. James*, and observ'd, that the Cane Chair in which I sat moved; I imagined a Dog was got under it, and bid the *Indian* turn him out. He answer'd, Father, it is no Dog, but an Earthquake. It increased to such a degree, that leaving the Penitent, I kneel'd down to beg Mercy of God, I thought the end of the World had been at hand. I have seen several Earthquakes, but none so great as that. When it was over, I said, if it had been as great in *Manila*, there is not one Stone left upon another: I was afterwards inform'd it had done some harm, but not considerable. It was an Hundred Leagues from thence to *Manila*, and much Water betwixt."

In the year 1657,^l April 24, an Earthquake happened in the South Parts of *Norway*, one hundred and sixty Miles in length, and so much in breadth, contrary to the Nature of all those

vero quemlibet immediate præcessit mugitus quidam in Aere, et quasi rotarum actio, qua majora tormenta bellica per plateas vehuntur, terram succuteret. — Didici ab amicis, iisdem pene momentis, iisdemque tribus repetitum vicibus, pari intervallo diremtis, similique comitante mugitu, Tremuisse *Bruxellam*, *Antwerpiam*, *Liram*, *Gaudanum*, *Montes Hanoniæ*, *Namurchum Camerachum*. Deinceps audivimus idem accidisse in *Hollandiâ*, *Zelandiâ*, *Frisiâ*, *Luxemburgo*, et *Gelriâ*; imo *Francofurtum ad Mænum* usque, non minus tremuisse; *Metziis* aliquot turres dirutas, et nova ædificia prope *Threnopolin* corruisse; tremuisse quoque *Westphaliâ*, imo *Ambiarum*, et *Galliæ* finitimas oras. — Tractus est ad minimum tercentum sexaginta *Leucarum*, singulis ejus circuli minimis locis, æquali ubique formidine, trepidabat solum. — Intellexi naves in portubus *Hollandiæ* atque *Zelandiæ*, malis, atque antennis concussas, absque vento.

Terræ Tremor. vid. oper. *Johannis Baptistæ Van Helmont*, Edit. 4^{to}. *Francofurti*, 1682. p. 90.

^k *Navarette's Travels*. See *Churchill's Voyages*, &c. vol. 1. p. 273.

^l *Philosophical Transactions*, vol. 13. N^o 151. p. 319.

Earth-

Earthquakes, that ever I read of, says *Michael Peterfon Escholt*, that describes it; but *Kircher* mentions one, Two hundred Miles in length. *Mund. Subterr.* lib. 4. f. 2. c. 10.

In the year 1660,^m in the Month of *June*, there was a terrible Earthquake, which affected all that part of *France* which lies between the Cities of *Bordeaux* and *Narbon*, and swallowed up a great Mountain.

At *Ragusa*, a City of *Illyricum*, there happen'd a terrible Earthquake on the 6th of *April*, 1667,ⁿ which in a moment overturn'd the Duke's Palace, and

^m Hoc loco omittere non possum, quæ, dum hæc scribo mihi referuntur. Anno 1660, mense *Junio*, quo ingens Terræ motus infestavit omnem illam Gallia regionem, quæ se a *Burdigalensi* urbe ad *Narbonam* extendit; erat prope *Bigornium* ingens et præcellus mons, qui ferocientis naturæ vi, ita absorptus dicitur, ut præter lacum ingentem quem post se reliquit, nullum ejus amplius vestigium apparuerit; addunt, districtum illum circa *Pyrenæos* Montes compluribus Thermis fuisse refertissimum; in quarum *Unis* post montis ruinam, aquæ prius ferventissimæ, tantum frigoris contraxerunt, ut proinde nemo amplius illis uti possit. — *Kircheri Mundi Subterranei*, tom. 1. p. 278.

ⁿ Die Mercurii 6 *April*, Anno 1667. Inter horam 13, 14. protinus exurgebat ex tellure horrendus, et terribilis terræ motus, qui in momento evertēbat Palatium Ducis, Ducemque ipsum in ruinā opprimebat. Idem casus communis fuit omnium Palatiorum, Ecclesiarum, Monasteriorum, et ædium dictæ civitatis; dumque omnia sursum deorsum ferebantur, plurimi interempti, accedebat damnum ex faxis molis ingentis, quæ devolvebantur ex montibus, adeo ut civitas universa in rudera sit versa. — Malum quod non sine maximo dolore complurium dierum spatio spectabant pauci illi, quos casus ille reliquos et superstites siverat, neque hi excedebant numerum 600 circiter, 25 Nobilibus exceptis.

Non sine lachrymis spectasses populum hunc maximam partem mutilum, quasi sensibus destitutum, ambulantes per plateas minus turbatas, cum *Rosario* circa collum, implorantemque divinam misericordiam, et remissionem peccatorum suorum: Imo et castellum aperiri visum, rursusque bis claudi: et undæ maris quater resfluere, ut omnes fontes hujus loci arefcerent, ne guttâ quidem aquæ ad potum relicta. — Non defuere complures, qui affectu compassionis
moti

and buried the Duke in its Ruins: The like happen'd to the rest of the Palaces, Monasteries, Churches, and Houses of that City: In which the greatest part of the Inhabitants lost their Lives: Not above 600 out of 6000, escaping. It was a most moving spectacle to behold the few remaining Inhabitants of the place, maim'd and mangled, walking about in utter Despair, and imploring the Mercies of Heaven. During the Calamity, many compassionate People, moved with the Cries of those who lay buried under the heaps of Ruins, went to their Assistance, and got them out alive, though some of them had been three, four, and even five Days in that distressful condition, without any thing to sustain them all that time but their own Urine. This Earthquake lasted for eight Days together; but the Shocks became less violent every Day. Several Towns in *Dalmatia* and *Albania*, suffered by the same Earthquake.

In the year 1668,^o there was a great Earthquake in the Province of *Zan Tung*, in *China*.

The Earthquake at *Naples*, which happened on the fifth and sixth of *June* 1688, overturned several of their Churches and religious Houses,

moti concurrebant ad vocem quorundam dolentium sepulcorum sub ruderibus, et misericordia pulsi annitebantur amoliri ligna faxaque quibus miseri erant obruti, quos adhuc spirantes servabant, licet tres, quatuor, quinqueve dies, hanc calamitatem sustinuissent; unde erepti dicebant se vitam sibi protraxisse solo potu propriæ urinæ. — Hic terræ motus continuos octo dies duravit, quanquam minoribus usque indies succussibus. Eodem tempore dictus terræ motus damno affecit *Castellum Novum*; ejusque burgos in *Albania* ditionis *Turcica* regione: Idem casus concussit *Dulcinium* et *Antivarum*, et in *Dalmatia* *Perastum*, et *Cattarum* interemptis 300 circiter. *Kircheri Mundi Subterranei*, tom 1. p. 242. 243.

^oAn account of the Empire of *China*, book 2. chap. 17. *Churchill's Voyages*, &c. vol. 1, p. 101.

particularly the fine Church of the *Jesuits*, with a third part of the City, and destroyed several Ships in the Harbour; of which we meet with the following account, by a Person who was then on the Spot.

“ A little after four in the Afternoon^p we were put into such a Confusion as cannot be expressed; we perceived the Houses stoop and recover again, to part from one another, and in some places to fall; soon after, a more violent Earthquake succeeded; and a Subterraneous noise, surpassing that of Thunder, was heard; whilst our Household Goods at the same time clattered about our Ears, the Bells rung in the Steeples, the Reservoirs and Cisterns threw out their Waters, many Houses fell, and others stood stooping just ready to fall; whereupon we heard the most hideous Shrieks from all parts of the Town: Some embraced, and took an eternal farewell of their Friends; others threw themselves headlong out of their Windows, not knowing what they did. But before the third Shock, People being a little recovered from their consternation, began to consider how to save themselves by flight. When the Earthquake was over, those who had run into the Fields and Gardens, returned to see what was become of their Houses and Acquaintance, they left behind; but the next Morning their consternation was renewed by the Thunder, and Lightning, and Storms that lasted two or three Days. The Streets were filled with Pro-

^p *Salmon's Modern History*, third Edit. Vol. 2. p. 385. Where he informs us, that there was an Eruption of Mount *Vesuvius* in this very year 1688, also in the years 89, 94, 96, 1701, 1707.

cessions

cessions of Penitents, Women, Children, Old Men, Ecclesiastics and others, clothed in Sackcloth, &c. to atone the Wrath of Heaven."

"As Earthquakes are too frequent in *Hispaniola* (says Sir *Hans Sloane*⁹) where formerly they threw down the Town of Saint *Domingo*, so they are but too common in *Jamaica* also. The Inhabitants expect one every Year, and some of them are of opinion, that they follow their great Rains. One happened on Sunday, *February* 19, 1688, about Eight in the Morning. I found in a Chamber one Story high, the Cabinets and several other Moveables to reel, as if People had rased the Foundations of the House; I looked out of a Window to see what was the matter, and found that the Pigeons, and other Birds in an Aviary hard by, were on the Wing in as great astonishment, keeping themselves in that posture, not knowing where to alight. Wherefore concluding what it was, and the danger of being in an high brick House, I made what haste I could to get out; but before I had pass'd through two Rooms, and got to the stair-case, it was over. It came by shocks; there were three of them with a little pause between. It lasted about a Minute of time in all, and there was a small noise accompanied it. A pair of Stairs higher it threw down most things off the Shelves, and had much more visible effects than below. This was generally felt all over the Island at the same time, or near it; some Houses therein being cracked, and very

⁹ Introduction to the first Volume of his *Natural History of Jamaica*, p. 44. Copied in a great measure by Mr. *Salmon*, *Modern History*, third Volume in Folio, p. 579.

near ruined, others being uncovered of their Tiles ; very few escaped some injury, and the People in them generally were in great consternation, seeing them dance. The Ships in the Harbour at *Port Royal* felt it ; and one who was Eastward of the Island coming thither from *Europe*, met with, as he said, at the same time an Hurricane. A Gentleman being at that time abroad in his Plantation told me, he saw the Ground rise like the Sea in a Wave, as the Earthquake passed along, and that it went Northward ; for some small time after he had felt it, he saw by the motion of the Tops of the Trees on Hills some Miles distant, that it had then reached no farther than that place.

On *June 7. 1692,* an Earthquake happened at *Port Royal* in *Jamaica*, which in two Minutes destroyed most of the Town. The Earth opened and swallowed up abundance of Houses and People ; the Water gushed out from the Openings of the Earth, and tumbled the People on heaps ; but some of them had the good fortune to catch hold of Beams, and rafters of Houses, and were afterwards saved by Boats. Several Ships were cast away in the Harbour, and the *Swan* Frigate which lay in the Dock to careen, was carried over the tops of the sinking Houses, and did not however overset, but afforded a retreat to some hundreds of People who saved their Lives upon her. Major *Kelley*, who was in the Town at that time, says, the Earth opened,

^r *Salmon's Modern History*, Vol. 3. p. 580. third Edition. See *Philosophical Transactions*, Numb. 29. p. 77. Sir *Hans Sloane's* Introduction to the first Volume of the *Natural History of Jamaica*, &c. p. 58, 59.

and

and shut very quick in some places ; and he saw several People sink down to the Middle, and others appeared with their Heads just above Ground, and were squeezed to Death. The Sky which was clear before the Earthquake, became in a Minute's time, as Red and as Hot as an Oven ; the fall of the Mountains made a terrible Crack ; and at the same time dreadful noises were heard under the Earth. The principal Streets which lay next the Key, with large Warehouses, and stately brick Buildings upon them, were all sunk. Part of the Town however was left standing, upon a Neck of Land, which runs into the Sea ; at the extremity whereof stood the Castle, which was much shattered.

The Water of the Harbour, says another Writer, rose on a sudden, with huge Waves, and drove most of the Ships from their Anchors ; and immediately the Sea retired again two or three hundred Yards, leaving the Fish dry upon the Sand ; but returned in less than two Minutes, and overflowed part of the Shore. After the first great Shock, as many People as could, got on board the Ships in the Harbour, not daring to venture on Shore for some Weeks, the Shocks still continuing. It is computed Fifteen Hundred People were lost in the Earthquake.

The Earthquake was general all over the Island, and the noise in the Mountains so terrible, that many of the Fugitive Slaves that had run away thither, returned to their Masters. Two Mountains which lay between *Saint Jago*, and *Sixteen Mile Walk*, joined together, and stopped the current of the River, so that it overflowed

flowed several Woods and *Savannahs*. On the North side of the Island, above a thousand Acres were sunk with the Houses and People in them; the place appearing some time like a Lake, was afterwards dried up, but no signs of Houses were to be seen. At *Yellows*, a great Mountain split, and destroyed several Plantations with the People on them; and one Plantation was removed a Mile from the place where it formerly lay. The Houses were in general thrown down, or damaged all over the Island; and it is computed that 3000 People were killed, with those that were lost in *Port Royal*.

In the City of *Messina* in *Sicily*,^t there happened an Earthquake in *January* 1693, which overturned 24 Palaces, and shook the rest of the Town; whereupon the People fled in the utmost consternation, some to the Fields, and others to the Churches to Prayers, especially to the Cathedral, where the Archbishop preached, and gave Absolution, as the Priests did in all parts of the City. They apprehended, that their last Hour was approaching; and surely, nothing could be more terrible; for not only the Earth shook, and threatened to lay their City in ruins, but the

^t *Salmon's Modern History*, third Edition, Volume 2. pag. 397. It is to be wondered at (says Mr. *Chishull*, in his Letter to Dr. *Turner* from *Smyrna*, *June* 13. 1700. See his *Travels in Turkey*, &c. published in Folio 1747, p. 176.) that these People (namely of *Messina*) have not yet registered an accident, of which as to the Fact our *English* Merchants were Eye witnesses, namely, that in the late repeated Earthquakes of *Sicily*, in 1693, the Tower of this Cathedral, which stands at the West end, distinct from the Body of the Church, was so distorted by one Shock, that it stood very dangerously in an oblique declining posture; but that about a Week afterwards, another Shock restored it to its former true perpendicular situation.

Thunder and Lightning which happened at the same time, was equally dreadful, the Air being all in a Flame ; however they escaped much better, than the rest of the great Towns on the same side of the Island.

At the same time in " *Catanea* near Mount **Ætna* in *Sicily*, was an Earthquake, which shook the whole Island ; and not only that, but *Naples* and *Malta* shared in the Shock. It was impossible for any Persons in that Country to keep on their legs on the dancing Earth ; nay those that lay on the ground were tossed from side to side, as on a rolling Billow : High Walls leapt from their Foundations, many paces. — Father *Antonio Serrovita* being

" *Philosophical Transactions*, N° 207. *Salmon's Modern History*, Vol. 2d. p. 397. " This Place was famous for the piety of two Brethren *Amphinomus* and *Anapius*, who rescued their Parents engaged by the Fire, and bare them away on their Shoulders." Whereof *Silius Italicus*, lib. 13.

*Catine nimium ardenti vicina Typhæo,
Et generasse pios quondam celeberrima fratres.*

And *Ausonius*, *Clar. Urb.* 10. — *quis Catinam fileat —
Hanc Ambustorum fratrum pietate celebrem.*

See *Sandy's Travels*, 7th edit. p. 189.

**Ætna*, a Volcano, or Burning Mountain in the Island of *Sicily*, which by its fiery Eruptions and Earthquakes has overturned several of their Cities on the Eastern Coast of the Island. It is (according to Mr. *Salmon*,) 50 Miles South West of *Messina*, and 20 Miles West of the City of *Catanea* ; from whence, the first part of the way is full of Towns and Villages, Vineyards and Plantations, which are rendered fruitful by the Ashes thrown out of the Volcano ; beyond this the rising Grounds are planted with Vines and Fruit-Trees, intermixed with Corn-fields and Pastures, and the upper part is planted with Fir-trees ; and here are Clefts and Cracks in the Earth, from whence issues Smoke. This Mountain is so high, that it is surrounded with a Circle of Snow towards the Top great part of the Year ; but advancing a little farther we come to the Grand Volcano, from whence there issues Flames and Smoke : This is a Bason or Cavity about six Miles in circumference, the Sides whereof are cruited with Sulphur, from whence there sometimes issues a pure Flame, and the Noise of this burning Pit is

in:

being on the way to that City, at the distance of a few Miles, he observed a black Cloud like Night, hovering over the City, and there arose from the *Mon Gibello* [*Ætna*] great Spires of Flame which spread all around: The Sea on a sudden began to roar, and rise in Billows; and there was a Blow, as if all the Artillery in the World had been discharged at once; the Sea retired from the Town above two Miles; the Birds flew about astonished, the Cattle in the Fields ran crying, &c. His, and his Companion's Horses stopped short, trembling, so that they were forced to alight. They were no sooner off, but they were lifted from the Ground: He with amazement saw nothing but a thick Cloud of Dust in the Air. The People of the Town ran to the Cathedral in the greatest consternation, to deprecate the Wrath of Heaven; but both the Church and City were overturned in a moment; and of 18914 Inhabitants, 18000 perished therein: And in the Earthquakes in the se-

inconceivably dreadful. This Mountain is much larger than *Vesuvius* in *Naples*, viz about 70 Miles in Circumference at the bottom, and the Eruptions from it have been more frequent and more terrible than those of *Vesuvius*. See also a full account of this Mountain in *Kircher. Mund. Subterr.* tom. 1. p. 200.

Virgil gives the following Description of Mount *Ætna*. *Æneid.* 3, 571. &c.

— Sed horrificis juxta tonat *Ætna* ruinis,
Interdumque atram prorumpit ad *Æthera* nubem,
Turbine fumantem piceo, et cadente favilla:
Attollitque globos flammaram, et sidera lambit:
Interdum scopulos avulsaque viscera montis
Erigit eructans, liquefactaque saxa sub auras
Cum gemitu glomerat, fundoque exæstuat imo.
Fama est, *Enceladi* semiustum fulmine corpus
Urgeri mole hac, ingentemque insuper *Ætnam*
Impositam, ruptis flammam exspirare caminis;
Et fessum quoties mutat latus, intremere omnem
Murmure *Trinacriam*, et cælum subtexere fumo.

veral

veral Towns and Cities in Sicily,* F. Burgos observes, that near 60000 perish'd out of 254900.

"In 1699,^y the *Tommogon Porbo Nata* in his going towards the Mountains (about the *Tungarouse* and *Batavian* Rivers,) heard a noise like unto Thunder; and fearing that a sinking down of the ground, or an eruption of Water would follow, he stood still with those that were about him, and saw afterwards that the Earth from the top of the Mountains sunk down; and hearing no farther Noise, he went on his Journey, having in going and coming back spent nineteen days by the way, and felt forty times an Earthquake: And since his return from the Mountains, he felt the like Shakings two hundred and eight times."

"On June 19. 1718,^z at three in the Morning, some slight Shocks of an Earthquake were felt at *Sin-gan-son*, the Capital of the Province of *Xenfi*; but they did little damage. The same happened at seven o' Clock at *Ning-hai*, where the Shocks were neither long nor terrible; but at the same time it was more rough at *Lanchecton*; the South Gate whereof fell, as did the Walls of several small Towns. At *Young Ningtchin* the Mountains in the North were thrown to the South, though there was a Plain between of above two Leagues. That large Borough was entirely swallowed up, without leaving any mark either of Men, Houses, or Animals: Northward of the Town of *Tong-ouei*, the Earth opened, the Mountains fell; and falling, rolled upon the Town, entering by the North side, and passing

* *Philosophical Transactions*, Numb. 202. ^y *Ibid.* N^o 264.

Historical and Political Mercury for the Month of August 1720.

to the South ; so that in the twinkling of an Eye the whole Town was overwhelmed : The Plain rose in the Waves, to the height of six Fathoms, or more ; the Houses, publick Granaries, Treasury, Prisons, Prisoners, were all buried under Ground : Of the Governor *Hoang's* whole Family, only Himself, a Son, and a Valet, escaped ; and in general, scarce three Persons in ten were saved. At *Ting-min-chin*, from three in the Morning till eleven, the Earth trembled, the publick Buildings and Walls to the South were thrown down : About half of the Mount *Outai* fell towards the South, and killed or wounded a great number of Men and Animals. On *July 9*, a violent Shock threw down the Walls, and Houses of *Roie-ning* : In short, there is hardly a Place in the Province, that is not the worse for these Earthquakes."

In the Kingdom of *Sicily*, in the City of *Palermo*, in the year 1726,^z on the second of *September* between ten and eleven at Night, some Shocks of an Earthquake were felt, which at first were not very violent ; but soon increasing, it continued with great violence for the space of 24 or 25 Minutes ; by which most of the City, and a fourth part of the Houses were overturned, and entirely ruined. In the Ward of *Saint Clara*, a whole Street gaped on a sudden with a dreadful Noise ; from whence broke out Flames mix'd with calcined Stones, and a Torrent of Burning Sulphur ; which in less than half an Hour, reduced the whole Ward to Ashes. The People fled from the

^z *Salmon's Modern History*. vol. 2d, in fol. p. 398.

City into the Fields, notwithstanding they were encouraged by the Governor to stay, and extinguish the Flames of the burning City. It is computed that six thousand Persons were buried in the Ruin, besides those who perished in the Ward of Saint *Clara*. It was observed that the Air was then extreme sultry and hot. — Several days after the Earthquake, the People seemed to be extremely humble and penitent, going in Procession every hour of the day, with Scourges in their hands to discipline themselves: The Ladies dressed in Mourning with Crowns of Thorns, and lashed themselves till the Blood followed; and it was generally apprehended, that this Calamity was a Mark of God's Vengeance for the extravagance of the Inhabitants; because no other parts of the Kingdom ten Miles distant from the City, suffered.

But one of the most dreadful Earthquakes we have heard of, was that of ^a*Lima*; of which it may be truly affirmed, that scarce any ever broke

^a *Lima* the Capital of *Peru*, (See *Salmon's Mod. Hist.* Fol. Vol. 3. pag. 316.) is in 12 Degrees and a half South Latitude, on the Banks of a River about six Miles from the *South Sea*, and as much from the Island and Harbour of *Callao*; it was built by *Pizarro*, one of the King of *Spain's* Generals, in the Year 1534. He gave it the name of *Ciudad les Reges*, or the *City of Kings*; but this name is now disused, and the City is called by the name of *Lima*, from the Valley wherein it stands. It was built after the *Spanish* Model, a large Square in the middle, and wide regular Streets centering in the Square; so that from every Corner of the Streets, the whole Town, and neighbouring Fields may be seen. On the North lays the River, from whence *Canals* were cut, for watering their Lands, and supplying their Houses with Water. They have neither Rains nor Storms to disturb them on this Coast: Their Vineyards and Fields are watered by Rivulets which descend from the Mountains of the *Andes*; and their Fruits will ripen at any time of the Year if the Waters are turned into them. But their

broke out with such astonishing violence, or hath been attended with greater Destruction. — The Earthquake began, (according to an account said to be taken from an authentick Narrative published at *Madrid*,) upon *October 27*; but in another account, intituled, *A true and particular History of Earthquakes*, published 1748, p. 29. 'tis observed, that it began about Ten o'clock in the Night of the the 28th of *October 1746*. The Destruction did not so much as give time for Flight; for, at one and the same Instant, almost, the Noise, and the Shock, and the Ruin were perceived together; so that in the space of four Minutes (during which the greatest force of the Earthquake lasted,) some found themselves buried under the Ruins of the falling Houses; and others crushed to Death in the Streets by the tumbling of the Walls, which, as they ran here and

Earthquakes are very terrible; the City was almost overturned by them in the Years 1586 and 1687. They would be very happy, if it were not for such Shocks; for the adjacent Country is a perfect Paradise, producing plenty of Corn, Wine, Oil, Sugar, Flax, and Fruits; and the Heat of the Climate is constantly moderated by cool Sea-Breezes, or the Land Winds from the Mountains of the *Andes*.

The East side of the City (*History of Earthquakes*, pag. 13. published 1748,) is taken up by the Cathedral, and the Palace of the Archbishop; the West by the Council House, the Court of Justice, the Prison, and the Guard Chamber, with an uniform row of *Porticos* and Shops.

The principal Street of this place is near a League in length, and terminates near a Walk of five Rows of Orange Trees about 400 yards long; about the Middle of it is a Chapel called the Invocation of Saint *Liberata*, built in the Year 1711, in a place where the *Pix*, (a *Box*, or *Cup*, wherein the Host or consecrated Wafers are kept,) which had been stolen from the Cathedral, and buried under a Tree, was found.

There are few Houses in *Lima* of two Stories, except those in the great Square; the several Earthquakes having taught the Inhabitants, that the magnificent Buildings raised by the first Founders of the City, served for no other uses but as Sepulchres to their Ancestors.

and there, fell upon them: However the greatest part of them happened to be preserved either in the hollow Places which the Ruins had left, or on the top of the very Ruins themselves, without knowing how they got thither. The Earth struck against the Edifices with such violence, that every Shock beat down great part of them; and these tearing with them vast weights in their Fall, especially the Churches and other lofty Buildings, completed the Destruction of every thing they met with, even of what the Earthquake had spared. The Shocks though instantaneous, were successive; and at intervals, Men were transported from one place to another; which was the means of safety to some, whilst the impossibility of moving preserved others. No relation whatever is capable of conveying to the Mind an idea of the Horror, with which the
fight

Ancestors. However, the dread of Earthquakes has not hindered them from building many fine Churches, and high Steeples; the Arches are made of Timber and Cane work, but so well disguised, that few can discover what the Materials are. The Walls of the greater Structures are of burnt, the lesser of unburnt Bricks. Duret observes, that some of the Houses are very magnificent, being 80 Foot in Front, and twice as much in Depth. The Entrance into them is through a handsome Gate into a large Court; in the middle of which Court, is another Gate, from whence there is a Prospect of the Fountains of the Garden.

The Walls of the City were between 18 and 25 Foot high, and Nine in Thickness at the *Cordon*. (N. B. A *Cordon*, in Fortification, is a Stone Work jutting out between the *Ramparts* and the *Basil* of the Parapet: It goes quite round the Fortification.) So that in the whole compass of the Town, there is no one place broad enough to mount a Canon.

The *Spanish* Families in *Lima* amount to about 8 or 9 thousand Whites, the rest being generally *Mulattoes*, Blacks, and some *Indians*. The Inhabitants in number are about 25 or thirty Thousand, including the *Friars* and *Nuns*, which take up at least a quarter of the City.

Both

fight of these Ruins must strike the Beholders; the effects of this surprising Convulsion of the Earth being such, that before the close of Night, there was not a single House in the City that had not suffered more or less: The two fine Towers of the Cathedral were thrown down, the Monastery of the *Augustines* lay stretched in ruins, and almost every other Convent in the City was so much damaged, as to be no longer habitable. The Arch of a Bridge, upon which stood the Statue of *Philip* the fifth, was crumbled to pieces; and it is thought by some, that the number of Persons who perished, could not be less than 5000. [The Author of the *True History of Earthquakes*, p. 32, says, that it does not appear from the List taken of the Dead, that the Numbers had amounted to much more than 1141 Persons.]

On

Both Sexes are very inclinable to be costly in their Drefs, the Ladies especially, to the ruin of both their Husbands and Gallants. *Frezier* observes, that he saw Ladies there, who had about them above the Value of 60,000 pieces of Eight in Jewels.

To give some idea of the great Wealth of this City, we need only mention the Ostentation of the Merchants, who in the Year 1682, when the Duke of *Plata* made his entry as Viceroy, caused the Streets called *de la Merced*, or of *Mercy*, and *de los Mecadoces*, extending through two of the Quarters (along which he was to pass to the Palace) to be paved with *Ingots* of Silver, that had paid the Fifth to the King; the whole about 80 Millions of Crowns. (N. B. An *Ingot* generally weighs 200 Marks, of eight Ounces each, and are between 12 and 15 Inches long, 4 or 5 in breadth, and 2 or 3 in thickness.)

Lima is in some sort, the Repository of the Treasures of *Peru*; and it was computed some Years ago, that about six Millions of Crowns were annually expended there.

'Tis the usual Residence of the *Viceroy* of *Peru*, who is no less absolute than the King of *Spain*, whom he represents, being Governor and Captain General of all the Kingdoms and Provinces of that part of the *New World*.

His usual Guard is composed of a company of Halberdiers, a Troop of Horse, and a Company of Foot.

It

On the 29th of *October*, they felt, between Nine in the Morning and Twelve, no less than sixty Shocks, of which some were very violent; and if there had been any Houses standing, would have done a great deal of mischief. On the 30th, the returns of the Earthquake were so frequent, from Morning till Night, that no exact account of them could be obtained. From *Oct.* 31, to *Nov.* 10, the Shocks were very frequent, attended by a low grumbling Noise in the Bowels of the Earth, so hideous and terrible, that words are wanting to describe it.—Besides the sumptuous Palaces, and private Houses, 74 Churches, 14 Monasteries, and 14 or 15 Hospitals, were intirely destroyed on this occasion; all the Treasure of that magnificent City was buried in its Ruins; and the Gold and Silver Furniture, and the Jewels that were lost, were accounted inestimable.

It is said that upon an Emergency, the *Viceroy* can raise 100,000 Foot, and 20,000 Horse, through the whole extent of the Kingdom.

In *Lima* are several Courts of Justice; but the most remarkable one is that of the *Inquisition*, which was settled there in the Year 1569. It's Jurisdiction extends through all the *Spanish South America*; and there are Three superior Judges of this Iniquitous Court, who have Salaries of 3000 pieces of Eight each.

The University of that place, was founded by the Emperor *Charles* the Fifth, in the Year 1525, under the Title of Saint *Mark*, to which several great Privileges were granted at the time of its Foundation; which were confirmed by the Popes *Paul* the Third, and *Pius* the Fifth, who to enlarge them, in 1572 incorporated it into that of *Salamanca*.

The Monasteries, before the Earthquake, were above Twenty in number, and the Nunneries Twelve, which contained about 4000 Nuns. To which we may add a House founded by the Bishop of *Toribio* for Women divorced: It is incredible, says *Frezier*, to what an excess that abuse has been carried; there are People daily unmarried, with as much ease, as if Marriage was nothing but a civil Contract, upon a bare complaint of Misunderstanding, Want of Health, or content of Mind.—These were the most memorable Things in that famous City, before the late deplorable Earthquake.

On

On the same Day that *Lima* suffered so much, it fared a great deal worse with ^a *Callao*, a Sea Port Town within Two Leagues of *Lima*. ^b Its Port and Garrison were intirely destroyed, scarce any Marks of its former Situation remaining: Some few Towers indeed, and the Strength of its walls endur'd for some time the force of the Earthquake. But scarcely had the Inhabitants recover'd from their first Fright, which the dreadful Ruin of the Earthquake had occasioned, when suddenly the Sea began to swell; and rose to such a prodigious degree, that in falling from the height it had attain'd, although *Callao* stood above it on an Eminence, it rush'd forward with great Fury, and overflow'd its usual Bounds with so great a Deluge, that the greatest part of the Ships at Anchor in the Port were founde'r'd; and lifting the rest above the height of the Walls and Towers, drove them, and left them on dry Ground far beyond the Town: At the same time it tore up by the very Foundation all the Buildings and Houses that were left in it, excepting the two grand Gates, and some Fragments of the Walls themselves.—In this dreadful Flood

^a *Callao*, a Sea-Port Town to *Lima*, was defended by a strong Castle, that had 70 Brass Guns mounted on the Walls; close under which was the Place where Ships anchor'd in six Fathom Water.—The *Armadilla*, or *Little Armada*, sails usually from hence to *Arica*, where most of the Silver and Gold of *Peru* is embarked on board this Fleet: And returning to *Callao* the latter end of *March*, the same Treasure is transported the Month of *May* to *Panama*; and from thence by Land Carriage conveyed to *Porto Bello*. It is a Barren Island, two Leagues in length, that has neither fresh Water, Wood, or any green thing upon it. See *Salmon's Mod. Hist.* pag. 267.


^b See *True and Particular History of Earthquakes*, pag. 38.

were drown'd almost all the Inhabitants, who at that time amounted to about 5000 Persons, of all ages and Sexes; according to the most exact Calculations that could be made. Some who were able to lay hold of any Pieces of Timber which the Wreck afforded, floated for some time and kept themselves above the Waves: But those Fragments which offer'd them assistance at first in their Distress, proved, by their multitude, the greatest occasion of their Destruction; because wanting room to move in, they were continually striking against each other, through the violent Agitation of the Water; and so beat off those who had clung to them.—By some who were so happy as to save themselves, (amounting at most to 200,) it has been related, that the Waves in their Retreat encountering one another, by means of the Obstacles which the Waters met with, surrounded the whole Town, without leaving any means for preservation; and that in the Intervals, when the Violence of the Inundation was a little abated by the retiring of the Sea, there were heard the most lamentable Outcries of the wretched Inhabitants in their Distress. It will not be difficult to conceive the Confusion and Streights, which those miserable People found themselves in; when we consider, that they only preserv'd their Lives from each present impetuous Torrent of the Sea, in order to prolong the dreadful Affliction, which the apprehension of inevitably losing them at the return of the next overwhelming Wave, must infallibly have occasion'd.—Witnesses likewise of this account, are those, who being on board the Ships at the time, when

by the great Elevation of the Sea they were carried over the Town, had the opportunity of escaping unhurt. — Of 23 Ships that rode in the Harbour, 4 were stranded, and all the rest founder'd. The whole Tréasure of the Place, and the Provisions and Munitions of War belonging to the King of *Spain*, and kept in the Royal Store-Houses and Magazines, were entirely swallowed up. The Sea immediately threw up not only the dead Bodies, but great quantities of the Goods, and other valuable Effects, which had been set adrift by the several Wrecks, and Inundation of the City: Of which they sent word from *Callao*, and the Villages along its Coasts, to *Lima*; and at the same time gave notice, that the Shores were throng'd with a great Concourse of People, whom the desire of^a Plunder had brought together. Upon which the Viceroy of *Lima* (who acted in every instance like a Christian Hero, during the dreadful Calamity) gave orders to the *Corregidor* to go with a great number of Soldiers to the Villages of *Misaflores* and *Chorillos*, to cause all such Bodies as he should meet with along the Coast to be interr'd, and to secure all the Goods which the Sea was continually casting up; giving orders at the same time to the Town Major of *Callao* to take the properest measures to prevent the Embezzlement of such Effects, in order to restore them to those whose Property they should appear to be: And to cause

^a Tis observ'd, *History of Earthquakes*, p. 60. That in the Day in which the Earthquake at *Port-Royal* happen'd, as soon as night came on, a company of Rogues, call'd Privateers, fell to break open Warehouses and Houses deserted, to rob and rifle their Neighbours, whilst the Earth trembled under them, and the Houses fell upon some of them in the act.

a Proclamation to be issued, making it Death for any body to purloin the least Trifle belonging to them. And to enforce this Edict, two Gibbets were immediately erected at *Lima*, and two others at *Callao*; that by the sight of these Engines of Punishment, all evil-minded Persons might be deterr'd from secreting, and not discovering those Goods they had pick'd up.

 P.S. The Earthquake that happen'd at *Antioch* in the year 115, has already been mention'd in its *Chronological* Order in page 9; it may not be amiss to add here some of the principal circumstances relating to that dreadful Calamity, as they are related by the Authors of the *Universal History*, vol. xv. p. 138. 8^{vo} edit. — The Emperor *Trajan* being at that time in *Antioch*, the City was crowded with Troops, and Strangers from all Quarters come either out of Curiosity, or upon Business and Embassies; so that there was scarce a Nation or Province, but what had a share in the Calamity; and all the *Roman* World, as *Dio Cassius* observes, may be said to have suffer'd in one City. The Earthquake was preceded by violent Claps of Thunder, unusual Winds, and a dreadful Noise under Ground: Then followed so terrible a Shock, that the Earth all trembled, several Houses were overturn'd, and others tossed to and fro like a Ship in the Sea: The Noise of the cracking and bursting of the Timber, of the falling of the Houses, and a dismal, loud Roaring under-ground, drowned the Cries and Shrieks of the dismayed People. Those who happened to be in their Houses, were, for the most part, buried

under their Ruins; such as were walking in the Steets and Squares, were, by the Violence of the Shock, dashed against one another, and most of them either killed, or dangerously wounded. As the Earthquake continued, with some small Intermission, for several Days and Nights together, many thousands perish'd by it; and among the rest, the Consul *M. Peto Vergilianus*, with many other Persons of great Distinction. The most violent Shock of all, was on a *Sunday*, the 23^d of *December*. *Trajan* himself was much hurt by it, but nevertheless escaped through a Window out of the House where he was. *Dio Cassius* mentions, that Mount *Lison*, which stood at a small distance from *Antioch*, bowed with its Top, and threatned to fall down upon the City; that other Mountains did actually fall; that new Rivers appeared, and those which had flowed before, forsook their Course and quite vanished. When the Earthquake ceased, the Voice of a Woman was heard crying under the Ruins; which being immediately removed, she was found with a sucking Child in her Arms, whom she had kept alive, as well as herself, with her Milk. Search was made for others; but no one besides was found alive, except a Child, that was still sucking its dead Mother. This dreadful Earthquake is mentioned by various Authors, who all speak of it as one of the greatest Calamities recorded in History.

A N

A P P E N D I X,

CONTAINING

A distinct Series of those *Earthquakes* that have been felt in *England*, from the Year 974, to 1750.

IN the year 974,^a was a terrible Earthquake over the whole Kingdom of *England*.

In the year 1048,^b in the Reign of *Edward the Confessor*, there was an Earthquake at *Worcester*, *Darby*, and in several other Places of the Kingdom; and a Mortality amongst Men and Cattle immediately ensued in many Counties, attended with other remarkable Accidents.

In the year 1076,^c the Fifteenth year of the Reign of *William the Conqueror*, on the sixth of *April*, was a terrible Earthquake which shook the Ground very much.

In the year 1081,^d was an Earthquake attended with remarkable Noises and Groans from the Bowels of the Earth.

^a *Simeonis Dunelmensis Histor. de Rebus gestis Anglorum.* vid. *Histor. Anglican. Scriptor. X.* per *Twysden*, Col. 159.

^b *Simeon. Dunelmens. Histor.* Col. 138 *Chronic. Johannis Bromton.* vid. *X. Scriptor.* Col. 939.

^c *Speed's History of Great Britain*, edit. 1613. p. 421.

^d A. D. 1081, Factus est Terræ motus magnus, cum gravi mugitu, prima noctis horâ, sexto kalend. Aprilis. *Matthæi Paris Hist. Angl.* p. 14. Ed. 1571. *Flor. Hist. Matth. Westmon.* p. 228.

In the second of *William Rufus*, 1089,^e was likewise a dreadful Earthquake throughout the Kingdom, in which the Houses were shaken in a remarkable manner; a scarcity of Fruits ensued, and the Harvest was not finish'd till *November 30*.

In the year 1110,^f in the Reign of King *Henry the First*, was a dreadful Earthquake at *Shrewsbury*, and *Nottingham*, which continued from Morning till Night; at which time the River *Trent* was so low at *Nottingham*, that People walked over it.

In the year 1119,^g was an Earthquake in divers Parts of the Kingdom.

In the year 1133,^h in the Month of *August*, was an Earthquake in many Parts of the Kingdom.

In the year 1142,ⁱ an Earthquake was heard three times in the City of *Lincoln*, in one day.

In the year 1158,^k there was an Earthquake in many Parts of the Kingdom; the River *Thames* was dry at *London*, and People walk'd over it.

* Factus est Terræ motus 3^o Id. *Augusti* (1089) unde totam terram tremor invasit; cernebantur namque ædificia resiliere eminus, et mox pristino modo residere: Secuta est inopia fructuum, tarda maturitas frugum, ita ut ad Festum Sancti *Andree* vix messes reconderentur in horreis. *Annal. de Margan. Histor. Anglican. Scriptor. quinque*, Vol. I. p. 2. *Simeonis Dunelmensis. Histor.* col. 215.

^f Anno 1110, Terræ motus *Scrobesberie* maximus; fluvius qui *Trenta* dicitur; apud *Snotingham* a mane usque ad horam diei tertiam, spatio unius milliaris exiccatus, ita ut homines sicco vestigio per alveum incederent. *Simeonis Dunelm. Histor. X. Scriptor.* Col. 231. apud *Salopiam Chronicon Henrici de Knyghton. X. Scriptor.* col. 2379.

^g *Simeonis Dunelmensis. Hist. de Reb. gest. Angl. X. Script.* Col. 240.

^h *Simeon. Dunelm.* Col. 263.

ⁱ Anno 1142, auditus autem fuerat ter Terræ motus in eadem civitate, (*Lincolnia*) infra Natale Dom. *Simi. Dunelm. Hist.* Col. 268.

^k Anno Gratie 1158, Terræ motus factus est pluribus in locis per *Angliam*, et fluvius *Thamise* apud *Londinium* desiccata est, ut ficcis pedibus transiretur. *Chron. Gerv. Dorob. X. Script.* Col. 1380.

In the year 1165,¹ was an Earthquake in *England*, which happen'd upon the Conversion of *St. Paul*, in the Night time.

In the year 1179,^m at *Oxenball* near *Darlington* in the County of *Durham*, was a very remarkable Earthquake; where the Ground was raised to an incredible height, from Nine o'clock in the Morning till Sun-set; and then subsided with a dreadful Noise, which terrified People so much, that some died in the Fright; and made a deep Pit, which is to be seen to this day.

In the year 1185,ⁿ in the Northern Parts of *England* was an Earthquake, which in some Places demolish'd Houses.

In the year 1199,^o was an Earthquake principally in the County of *Somerset*; by the Violence of which several were thrown down upon the Ground.

In the year 1246, (or 1248,^p according to **Fabyan*) in the Reign of King *Henry* the Third, there happen'd so great an Earthquake in *England*, that

¹ *Chronic. Gervasii Dorobernens. X. Scriptor. col. 1398.*

^m Anno Dom. 1179, infra Natale Domini contigit in *Anglia* apud *Oxenbale*, quoddam mirabile à seculo inauditum, scilicet, quod in ipsa Domini *Hugonis Dunelmensis* Episcopi cultura, terra se in altum ita vehementer elevavit, quod summis montium cacuminibus obæquaretur, et ita quod super alta templorum pinnacula emineret, et illa altitudo ab horâ Diei nona, usque ad occasum solis immobilis permanfit. Sole vero occidente cum tam horribili strepitu cecidit, quod omnes cumulum illum videntes, et strepitum casus illius audientes perterruit; unde multi timore illo obierunt: nam tellus eum absorbit, et puteum profundissimum ibidem fecit, qui usque hodiernum diem patet. *Chronicon Johannis Brômpton. Script. X. Col. 1138. 1139. See Camden's Britannia.*

ⁿ *Ymagin. Historiar. a Radulfo de Diceto; X. Scriptor. Col. 628.*

^o *Ymagin. Historiar. Radulfi de Diceto, col. 709.*

^p *Higden's Polychronicon, translated by Treviza, fol. 320. *Fabyan's Chronicle, vol. 2. fol. 25. edit. 1516.*

the like had been seldom seen or heard. ⁹ In *Kent* it was more violent than in any other Part of the Kingdom, where it overturn'd several Churches.

In the year 1247,⁵ in the Month of *February*, there was an Earthquake in many Parts of *England*; but the most violent in and about *London*, especially upon the Banks of the River *Thames*: Several Houses were demolish'd by it.

In the year 1248⁶, was an Earthquake, which did considerable Damage in the Diocese of *Bath* and *Wells*; and more particularly to the Cathedral Church of *Wells*.

In the year 1250⁷, there was an Earthquake at Saint *Albans*, and in the neighbouring Places called the *Chilterns*, (or Chalky Grounds) a thing in such Situations very uncommon. This trembling of the Earth was attended with great Noises under ground, like Claps of Thunder; and what was also remarkable, the Pigeons, Sparrows, and other Birds, were greatly frightened by it, and flew about in great disorder, as if in danger from *Hawks*, or other Birds of Prey.

⁹ Hac æstate in *Angliâ* terræ motus est magnus, ubi raro cernitur et auditur, 12 Calend. *Junii* horâ nonâ multorum mortalium corda deterrens. In *Cantio* vehementius *Terra* tremuit, in tantum ut Ecclesias quasdam concuteret et dirueret Solo tenus. *Tho. Walsingham Histor. Angliæ. Camdeni Anglic. Normannic. p. 289.*

⁵ Anno Domini 1247. In vigilia Sancti *Valentini* factus est in *Angliâ* per diversa loca, præcipuè tamen *Londini*, maximè super ripam *Thamesis* fluvii, *Terra* motus. Qui ædificia multa concutiens, damnosus extitit, et nimium terribilis, quia ut credebatur significativus, et insolitus est in his partibus Occidentalibus, nec non et innaturalis, cum soliditas *Angliæ* cavernis terrestribus, et profundis traconibus ac concavitatibus, in quibus secundum philosophos, solet terræ motus generari, careat; nec inde ratio poterat indagari. *Matthæi Paris. Hist. p. 961.*

⁶ *Matthæi Paris Hist. pag. 1005.*

⁷ *Matthæi Paris Histor. p. 1067.*

In the year 1318^u, in *Edward* the Second's Reign, was a great Earthquake, which happened on *November* 14, (the day after the Feast kept in memory of Saint *Brice*^x, or *Britius*, Bishop of *Tours*, about the year 432,) which terrified many People.

In the year 1382^y, (the fifth year of *Richard* the Second) there was a general Earthquake, which was felt all over the Kingdom; and in some places did a great deal of damage: A few Days after, the Ships were much shaken by a violent Agitation of the Sea.

In the year 1385^z, (the eighth of King *Richard* the second,) there was an Earthquake, which the Historian observes, was a Forerunner of that great Commotion, which happened immediately after in the Expedition against the *Scots*.

In the same year^a was a second Earthquake, preceded by great Thunder and Lightning, to the no small terror of the Inhabitants; some having been killed by the Lightning.

^u In *Craftino Sancti Briffi*, Terræ motus fuit magnus et terribilis, deterrens corda mortalium plurimorum. *Tho. Walsinghami, Histor. Angliæ. Camdeni Angl. Normannic. &c.* p. 111.

^x See the *Legend. Wheatley's Rational Illustration of the Calendar.* sect. xi.

^y *Chronicon Henrici de Knyghton.* x. Scriptor. Col. 2644. *Chronicon Willielmi Thorn.* x. Scriptor. Col. 2157.

^z *Tho. Walsingham Hist. Angliæ. Camdeni Angliæ, Normannic, &c.* pag. 315.

^a Hoc anno septimo die post Translationem Sancti Thomæ Cantuariensis Archiepiscopi et Martyris, audita sunt tonitrua, et visa fulgura et Coruscationes jugiter per unam horam; quæ multorum corda terruerunt. Quorum ictibus quidam sunt mortui, quidam irremediabiliter læsi multis in locis. Quarto die sequente dictam tempestatem, affuit Terræ motus circa secundam vigiliam noctis. *Tho. Walsingham, &c. Camdeni Angliæ. &c.* p. 326.

In the year 1426^b, upon the Feast of Saint Michael the Archangel, between the Hours of one and two in the Morning, began an Earthquake preceded by Thunder and Lightning, which lasted two Hours; the Shock was not only felt in *England*, but in several Parts of the World.

“On May 25, 1551^c, about *Rygate*, *Croydon*, and *Darkin* in *Surry*, was felt an Earthquake, and especially at *Darkin*; Infomuch that there, and elsewhere, Pots, and Pans, &c. were moved out of their proper Places.”

“On February 17, 1571^d, at a place called *Kinaston* near *Marcley Hill*, in the County of *Hereford*, the Ground was seen to open, and certain Rocks with a piece of Ground removed forward by the space of four days, making at first a terrible Noise as it moved; it moved itself be-

^b Stow's *Annals*, p. 368.

^c Strype's *Memorials Ecclesiastical*, Vol. 2. p. 272.

^d Stow's *Annals*, p. 668. Camden's *Britannia*, Edit. 1722, Col. 691.

*I nor advise, nor reprehend the choice
Of Marcley Hill; the Apple no where finds
A kinder Mould: yet 'tis unsafe to trust
Deceitful Grounds: who knows, but that once more
This Mount may journey, and his present site
Forsaking, to the neighbours Bounds transfer
The goodly Plants, affording matter strange
For Law Debates. — Philips's Cyder, book. 1.*

Mr. *Philips* may probably in the two last Lines allude to the following account in *Kircher*. “Refert *Ægidius Neopolitanus* in sua de montis *Vesuviani* incendiis diatribâ — Suo tempore horrendum in *Basilicatâ Neopolitani* regni provinciâ casum contigisse: ex formidabili quippe *Terræ* motu ibidem exorto, integrum montem *Vinearum* cultura nobilem ex loco suo in alium tribus inde millibus passuum intervallo dislitum, sine ullo in intermediantibus locis sui vestigio relicto, translatum fuisse; atque in hunc usque diem diuturnam inter dicti montis possessores in *Neapolitano Dicastrio*, quam vicariam vulgo vocant, litem pendere. *Kircheri Mundi Subterranei*, lib. 4. sect. 2. cap. 10. tom. 1. p. 240.

tween six of the clock in the Evening, and seven the next morning forty Paces, carrying great Trees and Sheep-Coats, some with threescore Sheep in them : Some Trees fell into the Chinks, others that grew on the same Ground, grow now firmly on a Hill ; and some that stood East, stand West ; and those that stood West, stand East. The Depth of the Hole where it first broke out, is thirty Foot, the breadth is eight score Yards, and in length about four hundred Yards. It overthrew *Kingston Chapel* ; two High-ways were removed near a hundred Yards, with the Trees and Hedge-Rows : The Ground in all is six and twenty Acres ; and where there was *Tillage*-Ground, there is now *Pasture* left in its place, and where there was *Pasture* there is now *Tillage*. The Ground as it removed, drove the Earth before it, and at the lower part overwhelmed the Ground so, that it is now become a Great Hill, twelve Fathoms (24 Yards) in height*. It removed

* Though these kind of Earthquakes, or Motions of the Earth, have not been common ; yet *Pliny* (*Nat. Hist.* 2. 83.) makes mention of Mountains removing from their proper places, and of Meadows and Fields of *Olives* changing places.

Factum est semel, quod equidem in *Hetruscæ* disciplinæ voluminibus inveni, ingens terrarum portentum, *L. Marcio*, *Sexto Julio* consulibus, in agro *Mutinesi*. Montes duo inter se concurrerunt, crepitu maximo assultantes, recedentesque, inter eos flamma fumoque in cælum exeunte interdiu, spectante e viâ *Emiliâ* magnâ equitum *Romanorum*, familiarumque, et viatorum multitudine. Eo concursu villæ omnes elisæ, animalia permulta quæ intra fuerant, exanimata sunt, anno ante *Sociale Bellum*.

Non minus mirum ostentum et nostra cognovit ætas, anno *Neronis* Principis supremo, sicut in rebus ejus exposuimus, pratis, oleisque, intercedente via publica, in contrarias sedes transgressis, in agro *Marrucino*, prædiis *Vestii Marcelli* Equitis *Romani*, Res *Neronis* procurantis.

moved from *Saturday* till *Monday Night*, and then stopped."

"On *February 26. 1574*,^f between five and six o' Clock in the Afternoon, great Earthquakes happened in the Cities of *York, Worcester, Gloucester, Bristol, Hereford*, and in the adjacent Counties; which caused People to run out of their Houses, for fear they should have fallen upon them. In *Tewksbury* and many other Places, the Dishes fell from their Cupboards, and the Books in Mens Studies from their Shelves. In *Norton Chapel*, People being on their knees at Evening Prayer, the Ground moving, occasioned their running away in great fear that the dead Bodies would have risen, or the Chapel have fallen upon them. Part of *Ruthen Castle* fell down, and several Brick Chimneys in Gentlemen's Houses; the Bell in the Shire-Hall at *Denbigh* tolled twice, by the shaking of the Hall."

Naclerus mentions something of the like kind, *Chronograph*. Vol. 2. Gen. 4. p. 926.

Periaval (*History of the Iron Age*. Part 1. p. 88.) makes mention of the Fall of one of the highest Mountains amongst the *Grisons*, by an Earthquake in the year 1618, which overwhelmed a small Town called *Pleara*, and swallowed up the Inhabitants; so that there was not any Trace or Sign left of the Place.

The Right Rev. the Lord Bishop of *Clogher* in *Ireland*, Fellow of the Royal Society, gives an account of the subsiding, or sinking down of a Hill near *Clogher*, *March 10. 1712-13*. *Philos. Transact.* Vol. 28. p. 267. And Mr. *Sackett* in a Letter to Dr. *Brook Taylor*, Reg. Soc. Secr. 1715-16, gives an account of a very uncommon sinking of the Earth near *Folkstone* in *Kent*. *Philos. Transf.* Vol. 29. pag. 469. And since that, a few Years ago, part of the Hill at *Scarborough* sunk.

^f *Stow's Chronicle*, p. 679.

" On

"On April 6. 1580,^s being the *Wednesday* in *Easter-Week*, about six of the Clock in the Evening, a sudden *Earthquake* happened in *London*, and almost generally throughout the Kingdom of *England*, which caused a remarkable consternation in the People. The Great Clock-Bell in the Palace of *Westminster* struck of itself, and divers other Clocks and Bells in the City and elsewhere did the like. The Gentlemen of the *Temple* being at Supper, were so much scared with the Shock, that they ran from their Tables and out of the Hall with their Knives in their hands: A Piece of the *Temple Church* fell down, some Stones fell from *St. Paul's Church*; and at *Christ Church*, in Sermon time, a Stone fell from the Top which killed one *Thomas Grey* an Apprentice, and another Stone so bruised his Fellow Servant *Mabel Everet*, that she lived but four Days. Several People were sore hurt by crowding to get out of the Church; divers Chimnies in the City tumbled by the violent shock given to the Houses. The Earthquake continued in and about *London* about one Minute, and was no more felt. But Eastward, in *Kent*, and on the Sea-Coasts, it was felt three times. At *Sandwich* at six o' Clock, the Land not only quaked, but the Sea foamed so much, that the Ships tottered. At *Dover*, about the same hour was the like Shock, so that part of the *Cliff* fell into the Sea, with a piece of the Castle-Wall. A

^s *Stow's Chronicle*, p. 687. See *Camden's Hist. of Queen Elizabeth*, sub Ann. 1580. Who observes, that it reached the *Netherlands* almost as high as *Colen*.

small part of *Saltwood* Castle in *Kent* fell down, and in the Church of *Hythe* the Bells were heard to found, a piece of *Sutton* Church in *Kent* fell down: And in all these places, and in *East Kent*, the Earth was felt to move three times; at six, at nine, and at eleven o' Clock."

"The first of *May*^h in the same year, after 12 o'Clock in the night, an Earthquake was felt in divers Places in *Kent*, namely at *Ashford*, *Great Chart*, &c. which made the People rise out of their Beds, and run to their Churches, where they called upon God by earnest Prayer to be merciful unto them."

"On *January* 13. 1583,ⁱ in the Parish of *Armitage*, in a Place called *Blackmore* in *Dorsetshire*, a piece of Ground containing three Acres removed from the Place where it was first planted, and was carried clean over another Close, where *Elder* and *Willow*-Trees grew, the space of 60 Goades, (*qu. Gads*) every Goade containing 15 foot; and stop'd up a High-way that directed toward the Market Town of *Cerne*; and yet notwithstanding, the Hedges wherewith it was inclosed, inviron it still, and the Trees stand thereon bolt upright, saving one Oak that is well nigh twenty Goads removed; the place where this Ground had its being, is left like unto a great Pit."

"In the year 1596,^k in the Parish of *West Ram*, in the County of *Kent*, two Closes lying together, separated only with a Hedge of hollow Ash-Trees, &c. on *December* 18, was found a Part thereof, of the length of 12 Perches, to be sunk 6 Foot and a half; the next Morning 16 Foot

ⁱ *Stow's Chronicle*, p.689. ⁱ*Ibid.* p.696. ^k *Stow's Annals*, p.783.

more,

more, the third 80 Foot more at least, and so from day to day. That great Breach of Ground contained in length about eighty Perches, and in breadth twenty-eight. It began first with the Hedges and Trees therein to loosen itself from the Grounds adjoining, and therewithal to shoot southward Day and Night for the space of eleven Days. The Ground of two Water Pits, the one six feet deep of Water, the other twelve feet at the least, and about four Perches over in breadth, having several Tufts of Alders and Ashes growing at the bottom, with a great Rock of Stone under them, were not only removed out of their Places, and carried towards the South at least 4 Perches apiece; but withal mounted aloft, and became Hills, with the Sedge, Flags, and Black-Mud upon the Tops of them, higher than the Face of the Water, (which they had forsaken) by nine Foot; and into the Place from whence they removed, other Grounds which lay higher are descended, receiving the Water, now lying upon them. Moreover, in one place of the plain Field, there is a great Hole made, by the sinking of the Earth to the depth of thirty Foot at the least, being in breadth in some places two Perches over, and in length five or six Perches. Likewise there is a Hedge of thirty Perches long carried Southward with its Trees seven Perches at the least. Several other Sinkings there are in divers Places, one of sixty-five Foot, another of forty-seven, and another of thirty-four Foot: By which means the highest Hills are become the lowest Dales, and the lowest Dales the highest Grounds."

"Jan.

“*Jan.* 19. 1665-6,^a At divers places near *Oxford* was observ’d a small Earthquake (as at *Blebbington, Stanton Saint John’s, Brill, &c.*) towards Evening. In *Oxford* itself, I do not hear that it was observ’d to be an Earthquake; yet I remember about that time (whether precisely then or not, I cannot say) I took notice of some kind of odd Shaking or heaving, I observ’d in my Study; but did impute it to the going of Carts or Coaches, supposed to be not far off; though yet I did take notice of it, as a little different from what is usual upon such occasions, (and wonder’d the more that I did not hear any;) but not knowing what else to refer it to, I thought no more of it. And the like account I have had from some others in *Oxford*; who yet did not think of an Earthquake, it being a rare thing with us.” The great Mr. *Boyle* confirms this Account in the following manner. “^bRiding one Evening somewhat late betwixt *Oxford*, and a Lodging I have at a Place four Miles distant from it, the Weather having been for a pretty while frosty, I found the Wind so very cold, that it reduced me to put on some Defensives against it.—My unwillingness to stay long in so troublesome a Cold, which continued very piercing till I had got half way homeward, did put me upon galloping at no very lazy rate; and yet before I could get to my Lodgings, I found the Wind turn’d, and the Rain falling; which, considering the shortness of the time, and that this

^a A Relation concerning the Earthquake near *Oxford*, communicated by Dr. *Wallis*, *Philosophical Transactions*, Vol. i. Numb. X. p. 166.

^b *Philosophical Transactions*, Numb. xi. p. 180.

Accident was preceded by a settled Frost, was surprising to me, and induced me to mention it at my return, as one of the greatest and suddainest Alterations of the Air I ever had observ'd.—Soon after, by my guess about an hour, there was a manifest Trembling in the House where I was, (which stands high in comparison of *Oxford*;) But it was not there so great, but that I, who chanced to have my Thoughts busied enough on other Matters than the Weather, should not have taken notice of it, as an Earthquake, but have imputed it to some other Cause, if one that you know, whose hand is employ'd in this Paper, and begins to be a diligent observer of Natural Things, had not advertised me of it, as being taken notice of by him, and the rest of the People of the House. And soon after, there happen'd a brisk Storm: Whereupon I sent to make enquiry at a Place called *Brill*; which standing upon a much higher Ground, I supposed might be more obnoxious to the Effects of the Earthquake, (of which, had I had any suspicion of it, my having formerly been in one near the *Lacus Lemanus*, would have made me the more observant:) But the Person I sent to, being disabled by Sickness to come over to me, (which he promised to do, as soon as he could) wrote me only a Ticket, whose substance was, That the Earthquake was there much more considerable, than where I lodged; and that at a Gentleman's House whom he names (the most noted Person, it seems, of the Neighbourhood) the House trembled very much, so as to make the Stones manifestly to move to and fro in the Parlour, to the great Amazement and Fright of all

the Family. The Hill whereon this *Brill* stands, I have observed to be very well stored with Mineral Substances of several kinds: From thence I have been inform'd by others that this Earthquake reached a good many Miles."

"In the year 1677,^c in *Christmas-time*, about eleven at Night, was an Earthquake in *Staffordshire*, which came with a Noise plainly to be heard before the shaking: It was considerable about *Willenball* near *Wolverhampton*, but very short, giving the Earth but one Shock, and moving (as they thought by the Noise) from South to North. The same Earthquake was felt also at *Hanbury* upon the confines of *Derbyshire*; but as Mr. *Villiers* of that Town, a sober grave Gentleman, assured me, it happen'd there about eight in the Evening; which argues its motion must be from East to West, and very slow; or else not the same Earthquake; neither whereof can be certainly concluded, for that no body knows in what Mæanders the Caverns of the Earth run; nor what Obstacles it might meet with by the way, to retard and prolong the time of its Motion."

"November 4, 1678,^d happened another Earthquake in this County. It was the most dreadful of any Place I could hear of about *Brewood*, whither it came with a Noise not like a Clap, but a flat rumbling distant Thunder; yet so great, that it waken'd People in their Beds, at eleven o'Clock in the Night; about which time it began, and continued till towards two in the Morning; the Earth moving very sensibly three times, at about

^c Dr. Plot's *History of Staffordshire*, p. 142. ^d Id ib. p. 143.

half an hour's distance each motion from the other. The Night following there happen'd another, but not so great; yet not without Noise, as I suppose very few do; if any, it must be where the Fire-damp kindles so deep in the Earth, that the Explosion cannot be heard through so dense a Body, as it may be thence to the Superficies, though the Convulsion may be sensible. That which was felt at *Oxon* about seven in the Morning, *September* 17, 1683, was also accompanied with a Noise like distant Thunder; the murmuring Sound (as appear'd to me) preceding the Shock about two seconds of time. *October* the 9th, in the same year, about eleven at Night, there happen'd another in *Staffordshire*, and all the adjoining Counties; which, as I have it from good hands, was not without a Noise neither; whence I conclude, that few or none happen without; and that all of them have their Origin from the kindling and explosion of Fire-damps."

September 17, 1683.* " There happen'd an Earthquake at *Oxford* and the Parts adjacent. The Circuit of which was seventy Miles or thereabouts. Its largest extent was from *South East* to *North West*: The least from *North* to *South*; as will appear by the following account of its Compass, the best that I could procure: It was perceiv'd a little short of *Kirklington*, *North* of *Oxford*, at *Blechington*, and at *Aylsbury South East*, where it was perceiv'd very plainly; as also at *Thame* which is *East*, and also at *Aston*, *Kingston*, and *Stoken-*

* See an Account of this Earthquake by Mr. Thomas Pigot, Fellow of a College in *Oxford*. *Philosophical Transactions*, Numb. 151. vol. 13. p. 311. 319.

Church Hill ; — At *Watlington*, *South East*, (some say at *Reading*, more *South*, and then its Compass may be suppos'd larger ;) at *Wallingford South East* and by *South* ; at *Abingdon South*, but not much ; not so far as *Faringdon South West*, but at *Brampton*, *West*, at *Burford* to the *North*, at *Long Hanborough North West* ; not much at *Woodstock* which is more *North*, little or none ; and at *Glympton* two Miles beyond, not at all, as I am informed."

^f The Reverend Mr. *Aspinal*, many years Master of the Free School in *Bedford*, and Rector of *Saint Peter's* in that Town, not long before or after the year 1690, (he being then Curate of *Saint John's*) lodging in that part of the Rectory House next the Publick Street, an heavy Stone Fabrick ; he was awaked out of his first Sleep by the Shock of an Earthquake ; but at first, as it was an unusual thing, he rather thought that it was some disorder in himself ; but not long after he felt a second Shock, being fully awake ; and the next Morning he heard of many in the Town, who had felt the same ; and particularly Dr. *Beaumont* an ancient Physician, who being in his Study, felt his Chair shake under him twice, soon after Midnight."

^g "You have heard no doubt of the late Earthquake, that affected some part of the *North*, as the dreadful Storm did the *South* : It being most observable at *Hull*, I was desirous of an account

^f An Account given by a worthy, and ingenious Friend to the Editor.

^g Part of two Letters from Mr. *Thoresby*, F. R. S. concerning an Earthquake which happen'd in some Places of the North of *England*, the 28th of December 1703. *Philosophical Transactions*, vol. 4. numb. 289. p. 1555.

from thence, that might be depended upon; and therefore writ to the very obliging Mr. *Banks*, Prebendary of *York*, who being Vicar of *Hull*, was the most suitable Person I knew, to address myself unto: And he being pleas'd to favour me with a judicious Account of it, I will venture to communicate to you, with his pious Reflections thereupon. "The Earthquake you mention, was felt here on *Tuesday* the 28th of the last Month (*December* 1703) which was *Childermas-Day*, about three or four Minutes after five in the Evening; I confess I did not feel it myself, for I was then walking to visit a sick Gentleman, and the Noise in the Streets, and my quick Motion made it impossible, I believe, for me to feel it; but it was so universally felt, that there can be no manner of doubt of the Truth of it. Mr. *Peers* my Reader, who is an ingenious, good Man, was then at his Study, and writing; but the heaving up of his Chair and his Desk, and the Shake of his Chamber, and the rattling of his Windows did so amaze him, that he was really affrighted; and was forced for a while to give over his Work; and there are twenty such instances amongst Tradesmen too tedious to repeat: My Wife was then in her Closet, and thought her *China* would have come about her ears; and my Family felt the Chairs move, in which they were sitting by the Kitchen Fire-side, and heard such a Rattle of the Pewter and Windows as almost affrighted them. A Gentlewoman not far off, said her Chair lifted so high, that she thought the great Dog had got under it; and to save herself from falling, slipped off her Chair. I sent to a House where part of a Chimney

ney was shaken down, to enquire of the Particulars; they kept Ale, and being full of Company that were merry, they did not perceive the Shock; only heard the Pewter and Glass Windows dance: But the Landlady's Mother, who was in a Chamber by herself, felt the Shock so violent, that she verily believ'd the House to be coming down; as part of the Chimney aforementioned did at the same moment; and cried out in a fright, and had fallen, but that she catched hold of a Table; it came and went suddenly, and was attended with a Noise like the Wind; though there was then a perfect Calm." "From other hands I have an account, that it was felt in *Beverly* and other Places, at *South Dalton* particularly, where the Parson's Wife (my only Sister) being alone in her Chamber, was sadly frighten'd with the heaving up of the Chair she sat in, and the very sensible Shake of the Room, especially the Windows. A Relation of mine, who is a Minister near *Lincoln*, being then at a Gentleman's House in the Neighbourhood, was alarm'd with the moving of the Chairs they sat on; which was so violent, he writes, Every Limb of him was shaken. I am told also from a sure hand, that so nigh us as *Selby*; where Mr. *Travers*, a Minister, being in his Study, writing, was interrupted much what as Mr. *Peers* above-mention'd: Which reminds me of worthy Mr. *Banks's* serious Conclusion. "And now I hope you will not think it unbecoming my Character, to make this Reflection upon it, *viz.* That Famines, Pestilences, and Earthquakes are joyn'd by our Blessed Saviour, as portending some Calamities, and particularly the Destruction of *Jerusalem*,

lem, and the Jewish State, if not the end of the World. S. *Matth.* 24. 7. And if as Philosophers observe, those gentler Convulsions in the Bowels of the Earth, which give the Inhabitants but an easy Jog, do usually portend the Approach of some more dreadful Earthquake; then surely we have reason to fear the worst, because I fear, we so well deserve it. And, pray God of his infinite Mercy to avert his future Judgements."

"Since my former Account of the Earthquake at *Hull*, my Cousin *Cookson* has procured me the following account from his Brother, who is a Clergyman near *Lincoln*, viz. That he being about five in the Evening, *December 28th* past, sitting with a neighbouring Minister at his House about a Mile from *Navenby*, they were surprised with a sudden Noise, as if it had been of two or three Coaches, driven furiously down the yard; whereupon the Servant was sent to the Door in expectation of some Strangers. But they quickly perceived what it was, by the shaking of the Chairs they sat upon; they could perceive the Stones move: The greatest Damage was to the Gentlewoman of the House, who was put into such a Fright, that she miscarried two Days after."

A Shock of an Earthquake was felt at * *Aynho*, in *Northamptonshire*, on Sunday *October 10*, about four o'Clock *Anno 1731*. Mr. *Jos. Wasse*, the Rector of that Place, (who communicated the account to the *Royal Society*) says, "that his Windows rattled, as if some body had been dancing over head. The concussion lasted about a Minute;

* *Philosophical Transactions*. Vol. 39. Numb. 444. p. 367.

others thought it lasted about two Minutes. It alarmed the neighbouring Villages; *Bloxam*, four Miles *South West* from *Aynho*; *Barford*, five; *Banbury*, four *West*; *Adderbury*, a Mile *West*; *Crowthon* a Mile to the *East*, and *Charlton* as much to the *North*. There was no notice of its Progress *South*, or *South East*. About a Minute after, some in the Town of *Aynho* saw a great Flash of Lightning. In the Morning the Sky look'd of a Land-Colour. It was said, that there was a former Shock felt upon *October 8*, about three in the Morning, and that the latter was preceded by a Noise like a distant Thunder."

SIR, London, Oct. 31, 1734.

"^aBeing just arrived from *Suffex*, where I heard a very extraordinary account of an Earthquake that happen'd there on Friday the 25th Instant, between three and four in the Morning; I take this opportunity of laying before you and the *Royal Society*, what account I was able to collect, during my stay there. I know most of the People that have signed the inclosed Papers, to be Persons of veracity: And what confirms me in my Opinion, that there was really an Earthquake, is, that almost every body agree in the same description, as to the sensation, the hour of its happening, and the perfect calm that was at that time. I observe the Shock was vastly more felt towards the Seaside; as at *Shoreham*, *Tarring*, *Goreing*, *Arundel*, and *Havant*. At my House of *Goodwood*, which is near three Miles North of *Chichester*, and about

^a Letter from his Grace the Duke of *Richmond* to Sir *Hans Sloane*, Baronet, &c. *Philosophic. Transactions*, vol. 39. Numb. 444. p. 361.

seven from the Sea, it was not so perceivable as at *Chichester*, and where it was still less so, than by the Sea-side. I do not hear as yet that there was the least touch of it in any part of the Vale on the North-side of the Downs, which for the most part run East and West. I think what Dr. *Bayley* of *Havant* says of the different motions of the Beds, according to the different situations they were in, is very well worth observing. This Gentleman is a Doctor of Physick, and a very curious Man."

I am, Sir, your obedient humble Servant,
Richmond and Lenox.

A Narrative of the same Earthquake by *Edward Bayley*, M. D.

Havant, October 25, 1734.

"Between three and four o'Clock in the Morning, an Earthquake was felt here. The Shock was so considerable, as to be observed by one or other in most Houses of the Town. I happened to be awake at that time, and perceived the Bed to shake under me with a quick, tremulous motion, which continued about two or three seconds, then ceased; and after a very short intermission, was repeated in the same manner, and lasted about the same space of time as near as I could guess. I was at first much surpriz'd at such an unusual *Phænomenon*; but upon a little recollection, concluded it must be occasioned by an Earthquake; and was soon confirmed in my conjecture by the concurrent observations of my Neighbours, and after-

wards; by accounts of the same from many other Places; in some of which it seems to have been more violent than here. Several Persons in this Place say, that they not only perceiv'd the shaking of their Beds, but also the rocking of their Houses, together with a rumbling Noise of Drawers, and the like moveable Goods in their Chambers, and other Rooms. A learned and ingenious Gentleman in this Town informs me, that the motion of his Bed appear'd to him, to be like the tossing of a Vessel when it crosses over a Wave, the Head and Feet thereof rising and falling alternately several times; whereas mine seem'd rather to rock from side to side. But these contrary motions of the two Beds are easily accounted for, by considering the different Postures of them; my Friend's standing directly *East* and *West*, and mine *North* and *South*: For supposing the undulatory motion, which the Earth might have at that time, was propagated from *East* to *West*, the same kind of motion which caused his Bed to rise up and down longways, must make mine rock from side to side; as may be observ'd in two Vessels sailing in contrary Directions on the same Waves of the Sea; that which crosses the Waves at Right Angles being tossed up and down endways, while the other moving in a Line parallel with the Waves, will be rock'd from side to side. What makes me more inclined to think the progressive motion of this Earthquake to have been from *East* to *West*, is, because it appears from the best accounts I have yet had of it, that it was observ'd sooner *East* than *Westward*, and likewise extended further from *East* to *West*, than *North* and *South*. It may not
be

be amiss to take notice of some remarkable *Phænomena* which happened before and after, as well as some other Circumstances which immediately attended this Earthquake; most of them agreeing with those Signs, which have been observed by the Learned to precede or accompany former Earthquakes, in these and other parts of the World. It is observable, that we have had lately more Rain and Wind for several Months successively, than for many years past; especially from the beginning to the middle of this Month; about which time it clear'd up, and the Weather became suddenly very cold, with frosty Mornings, the Wind blowing generally pretty hard from *North West*. On Wednesday the 23d, the Cold abated considerably; it was cloudy, but we had no Rain that day. The 24th was very calm all day; it rained most part of the Afternoon, though the Mercury stood at $30^{\frac{2}{10}}$. It continued very calm all night, and rained hard for some time before and after the Earthquake happened; but it soon clear'd up, and we had a strong Gale of Wind, which rose within half an Hour, or as some say, within a quarter afterwards: It continued blowing hard all the Forenoon. At four o'Clock in the Morning, I observed the Mercury continued at $30^{\frac{2}{10}}$ Inches; the *Spirit of Wine* at $55^{\frac{3}{10}}$, having risen about five Degrees since the last cold Weather.

October 29, 1734. *Edward Bayley.*"

"The circumstances related by his Grace, and by Dr. Bayley, are back'd by the united Testimonies of several; many of whom are known to his Grace to be Persons of Veracity, and whom he

procured to sign Certificates of what they observ'd concerning this accident at *Chichester* and other Places. [Then follow the Names of twenty Persons, certifying the Fact; the last of whom] *Philip Boisdaune*, Esq; in the Parish of *Funtington* in the County of *Sussex*, agrees with the other Persons, [all dwelling in the City of *Chichester*] that there was a manifest Shock of an Earthquake felt on *October 25*, which lasted about a quarter of a Minute, or while one might tell twenty; with a motion sensibly slow: For most of the accounts concur in this particular, that the Chairs, Wainscot, Doors, Chests of Drawers, and other Moveables were heard rattling; and one, that a Bell rung of itself just before they felt the heaving of their Beds; and that there was no Wind stirring at that time; but that it rain'd, and the Wind rose soon after. The Rev. Mr. *Richard Green*, Prebendary of *Chichester*, and Rector of *Merston* in the County of *Sussex*, had Informations of the same circumstances being felt at *Shoreham*, *Goreing*, *Tarring*, *Finchdon*, *Arundel Castle*, and *Merston*. Some of the Duke of *Richmond's* Servants, at his Seat called *Goodwood*, felt the same. Mr. *John Jenkins*, Riding Officer of the Customs, in the Parish of *West Wittering* near *Braglesham Bay* in the County of *Sussex*, described the Shock after the same manner; And he adds further, that within a quarter of a Mile of his House, a young Man of about eighteen or twenty Years old, having been at the same time to fetch up a Team of Horses from Grass, the Horses were so sensible of something more than ordinary, that they trampled, and seem'd very much affrighted as they were coming home."

"June

"June 15. 1748." In answer to your Inquiries concerning the Earthquake, which happened last year on the first day of July, when I was at Taunton in Somersetshire; after taking some pains to inform my self more particularly what other People observed in different Places, you may depend on the Truth of what follows. Between ten and eleven o' Clock at Night, on the said first day of July 1748, being myself in some company at Taunton, we were suddenly surprised with a rumbling Noise like distant Thunder; which was followed immediately by so considerable a Motion of the Earth, that the Chair whereon I sat rocked under me. The Noise and Shaking seem'd to come from a distance, and approached gradually in such a manner, as if a loaded Waggon had passed along; and continued nearly the same time as such a Waggon would require to go about an hundred Yards. The Motion went from South-East, to North-West; which being the direction of the Street, on one side whereof the House stood, some of us imagin'd at first that a Waggon had really gone along; ^b but upon running out, and enquiring, we found there had been no Waggon; and indeed, as we were satisfied afterwards, no Waggon could have been heard or felt in the Back Room where we sat, on the account of its great distance from the Street. Notwithstanding this happened between ten and eleven o' clock at Night, when most of the Town were in Bed; the Shock was so sen-

^a A Letter from the Rev. Mr. John Forster to Mr. Henry Baker, F. R. S. concerning the Earthquake at Taunton. *Philos. Transact.* for the Month of June 1748. p. 398, 399, 400.

^b See something like this, *Philos. Transact.* N^o 455. p. 289.

sible, that many People got up very much terrified; and they waking others, the Consternation soon became general; insomuch, that although it was a rainy Night, numbers of People ran out into their Gardens; and spent the Night there, being apprehensive of other Shocks: The account then newly brought us of a dreadful Earthquake at *Lima*, being fresh in every body's mind, contributed to increase the surprize. A worthy Clergyman, who lives five miles from *Taunton*, informed me, that the China and Glasses upon the Cupboards in his House, rattled and shook as if they would fall down, and the Bells in his House rung. A Person who was at that time coming on foot to *Taunton*, likewise told me, that the Noise seemed to him like the discharge of Cannon at a distance; and came rumbling onward, till the Earth moved under him in such a manner, that he could hardly keep upon his Legs: Several others also that were abroad, assured me, that they had much ado to save themselves from falling. The Extent of this Earthquake, as far as I could learn, was from Sea to Sea; that is, from the *South Channel* to the *Severn*. It moved from South-East, to North-West, and was felt in every Parish through this whole Course; which is in length about forty Miles. Nor was its breadth much less; for it was felt at the same time both at *Exeter* and *Crookhorn*, which lie from one another about the same distance of forty Miles, in a line directly across its before-mentioned Course. This, Sir, is the best account I am able to give; and I shall add nothing more, but that I am

Your most Humble Servant,

John Forster.

*York Buildings,
June 28. 1748.*

1st P. S. I have heard it reported, that there were Flashes of Lightning at the same time of the Earthquake; but I never saw any myself, nor have met with any body that could affirm they did."

"Tuesday, February 18. 1749-50. This day between twelve and one at Noon, the Shock of an Earthquake was felt all over the Cities of London and Westminster, and Parts adjacent; the Chairs shaking in the Houses, and the Pewter rattling on the Shelves; it was felt very sensibly on both sides the River Thames, from Greenwich almost to Richmond; insomuch that in all the Places the Inhabitants were struck with so great a Terror, that they left their Houses and ran into the Streets, being apprehensive, that the Houses were falling. The Counsellors in the Court of King's Bench and Chancery in Westminster Hall, were so alarmed, that they expected the Building would be demolished; at Hampstead, Highgate, and all round within six Miles of London, it was felt very sensibly; at the two abovementioned Places more particularly. In London it was felt most by the Inhabitants bordering near the River Thames; but was very perceptible in other Parts; and at Limehouse, Poplar, &c. it was so violent, that

^c London Magazine for February 1750. p. 91.

^d It is observed in the Gentleman's Magazine for February 1750, p. 89. "That the Shock was felt from Deptford and Greenwich to Gravesend, at Dagenham and Paynesbridge between Rumsford and Brentwood; at Cooper'sale near Epping, at Woodford, Wallbamslow, Hertford, Highgate, Finchley, (not at Barnet) just perceived at Richmond in Surrey, Bromley in Kent, (not at Deal or Canterbury).—The Universal Magazine for February 1749-50, p. 92, says, that it has since been reported, that it was felt at the same time at several places on the Southern Coast, and likewise on the Coast of Picardy, Bretagne and Normandy in France,

some Chimneys were thrown down. Several Boats and Ships at their Moorings in the River, received a surprizing Shock therefrom. In *Leaden-Hall Street* part of a Chimney was thrown down, as was also a Wooden Building at *Davis's Rents, Southwark*. In several Parts of *London*, the Pewter fell from the Shelves to the Ground. By a Person who came afterwards from *Brentford*, we are assured, that the same was felt very much there. And we are also assured, that it was very sensibly felt at *Gravesend*." 2

"*Thursday, March 8.* This Morning at half an hour after five o' Clock, the Town was again alarmed with another Shock of an Earthquake, which is generally allowed to be more violent, and of longer continuance, than that felt this day Month. Great numbers of People were awaked from their Sleep, merely by its violence; which however has done no other Mischief, than throwing down several Chimneys, and damaging some Houses. The Shock was so great in some Parts, that the People ran from their Houses and Beds almost naked. In the High Grounds by *Grosvenor Square*, &c. it is said to have been felt more than in other Parts; the Brasses and Pewter of several Kitchens being thrown down, and to some distance from the Shelves. In *Saint James's Park*, and all the open Places, the Ground moved very perceptibly, and the noise seem'd to break three times. About five o' Clock was a continual, though confused Lightning, till within a

* *The Gentleman's Magazine*, for March, 1750. p. 137. *London Magazine*, ditto. p. 138.

minute or two of the Shock being felt. It is reported by many People, that there was a small Shock between one and two this Morning. A Lady in *Piccadilly*, a curious Collector of Old *China*, who had piled it on Stands, had it flung down and broke; and a great *China* Shop in *St. James's Street*, had the like accident; Bells in several Steeples were struck by the Chime-Hammers, and great Stones fell from a Spire of *Westminster-Abby*. A Maid Servant in *Charter-house Lane* was thrown out of Bed by the Shock, and broke her Arm. The Dogs were sensible of it, and some of them howled in an uncommon manner; and Fish in Ponds were observed to jump half a yard above Water. The Shock was felt at *Chebunt, Hertford*, at *Coptball near Epping*, in *Kent*,^f at *Bromley, Croydon, &c.*

There have been so many different Accounts given of the Earthquake, that was felt on *April 2, 1750*, at *Chester, Liverpool, Manchester*, and the parts adjacent, that it is difficult to know which is most to be depended upon; the following seems to contain the truest and clearest Narrative of what then happen'd at those Places.

^e *Extract of a Letter from Liverpool.* "On the 2d instant, about Ten at Night, was felt a smart Shock of an Earthquake; it was felt pretty near 40 Miles North and South, and about 30 Leagues East and West. I perceived the Motion distinctly; it was partly a vibratory Motion, and did not con-

^f *London Magazine*, for March 1750, p. 139. 'Tis observed, that at *Beckenham and Croydon*, it occasioned the Hammers of the Clocks to strike upon the Bells.

^e *Ipswich Journal*, April 21, 1750.

tinue above two or three Seconds of Time. It alarmed the Inhabitants pretty much, but did little Damage. I was immediately apprehensive of what it was, went out to observe the Air, and found a much stranger Appearance than I ever before saw; great Mists and Blood-Red Rays converged from all Parts of the Heavens to one dark Point, but no Luminous Body could be seen. This uncommon Appearance dispers'd in about 15 Minutes."

Extract of a Letter from Manchester, April 9, 1750. "At a great many Towns and Villages all round us, was felt a Shock, and believed to be an Earthquake, this Day se'nnight about Ten o'Clock at Night. No Body that I can hear of was affected by it, or felt it that was upon a Ground Floor; only those in upper Rooms, where Numbers agree that they were moved up and down in their Beds, as though a Ship was floating on the Waves."

Extract of a Letter from Chester, April 11, 1750. "The Accounts lately published in the London Papers of an Earthquake here, which flung down Houses, rang Bells in Churches, or did any Damage to our Town-Hall, are absolutely without any Foundation. It is true, that on Monday the 2d instant, at Night, a Shock of the Earth was very sensibly perceived by many of our Inhabitants; but it is equally true, that the Goodness of Providence to us was such, that not a Third of our Inhabitants were affected by it; and that such who felt it scarce apprehended it was an Earthquake till the next Morning, when they knew their Neighbours were sensible of it at the same instant. No manner of Damage has been done by it, nor has there been any Repetition of it."

The

The following Narratives of two remarkable Earthquakes, being omitted in their proper Places; it may be agreeable to our Readers to have them inserted here, viz.

I. Part of a Letter from the Rev. Mr. Coleman of Boston in New England to the late Bishop of Peterborough.^a

“My Lord, Boston, Sept. 5, 1728.

The Earthquake (you enquire after) came upon us suddenly in the Night after the *Lord's Day*, Oct. 29, 1727, between Ten and Eleven, in a very still and fair Evening, the Stars so bright and glittering, that many had taken great notice of them; this is the only general Symptom of its Approach I have heard of, namely, the most serene Sky and warm Air that was ever known, and scarce a Breath of Wind. And tho' this is not universally a Symptom when Earthquakes are coming on Places, yet it has often been observ'd. — The Town of *Newbury*, about 40 Miles North-East from *Boston*, is the Place that seems to have been the Center of the Shock and Shakes felt by us. There the Earth opened, and threw up many Cart-loads of a fine Sand and Ashes, mix'd with some remains of Sulphur; but so small, that, dropping some of it on bright Coals, in a dark place, once in three times the blue Flame of the Sulphur would plainly arise, and give a small Scent, and but a small one. By this it seems evident, that it was a Sulphurous Blast, that burst open the Ground, and threw up the calcined bituminous Earth. The

^a *Philos. Trans.* vol. 35. p. 124.

Family nearest to this Eruption, (it being in that part of the Town where the Houses lie at a distance from each other), were in the Terrors of Death; the Roar and Shock being much more terrible upon them, than upon others: And yet upon us at forty Miles distance, it was very terrifying and astonishing. Five or seven small Shakes were felt by us, after the first and Great one, that Night, and in the Morning following; but these and other following Rumbles and Tremblings, were louder and greater at *Newbury* and the adjacent Places, than with us.* *Benj. Coleman.*

II. At *Leghorn* (in *Italy*) from the 16th to 27th of *Jan.* 1742, were felt several Shocks of an Earthquake; the most considerable of which happened on the 19th and 27th, as appears by the following account of them given by a Person, who was then present. "At half an hour after 12 o'Clock at Noon, on *Jan.* 19, I heard a rumbling Noise,

* A Gentleman of *Newbury* writes upon the same occasion — "As to any previous Notices of the Approach of the Earthquake, I cannot find any thing to be depended on. The Prognostications that have been among us have failed; such as the brightness of the Sky beyond what was common, the twinkling of the Stars, and the like. I certainly know, that we have heard the Rumbles in all Weathers indifferently; and at all hours, (tho' oftener in the Night during *Winter*) also when the Wind has been at any Point of the Compass, and at all times of Tide: And as to the Moon, equally when she was nearer or farther from her Change and Full. One thing I may add here very remarkable, and which may be depended on. About the middle of *April*, that fine Sand which was thrown up in several Places in this Parish, at the first Great Shock, *Oct.* 29, did stink to a great degree, even so as to be more nauseous than a putrifying Corpse; yet in a very little while after it did not smell at all."

* *Philosophical Transactions*, vol. 42. Numb. 463. pag. 77.

which

which was followed by a great Shake of the House where I was; It came like a Blow, and the House waved from West to East. Half an hour afterwards there was another Shock, somewhat smaller: And all the remainder of the Day, the Earth was in continual Motion. Some Fishermen, who were then at Sea, observed a small part of the Sea rage violently, and raise itself to a great height in a white Foam, with a dreadful Roaring; which frighten'd them so, that they imagined themselves lost; though it did not directly beat upon them, but they felt it only on one side; which made them imagine, some violent Mischance had happened on Shore: And keeping their Eyes always on that troubled Part of the Sea, they perceiv'd, it made towards *Leghorn*, and broke on the old Fortrefs, which for a little while was hid from them. But the most remarkable Shock was about 1 o'Clock in the Afternoon of the 27th; which was preceded by a most dreadful Noise, and then followed a treble Shock of an Earthquake in the most frightful manner, and beyond measure violent: It began by a succussive Motion, and was followed by a sort of Blow with a horrible Violence; and at last came another succussive Motion, more horrible than the former. There was heard from under-ground a hollow terrible Rumbling, as if the whole Earth had broken to Pieces. The House waved about 32 Seconds from East to West. I looked upon myself quite lost, and expected nothing less, than the immediate Ruin of the House; especially, when I beheld part of the Door-Case falling, and the Partition-Walls crack'd; the Mortar fell all about like Rain, and the Furniture

ture and Cloaths hung on the Walls fell all down. I was not able to get out of the House, by the surrounding Crowd of frighten'd People, that flock'd in upon me. At last, however, I got out, and could hardly believe my Eyes, when I found the Houses all standing; having imagined Things to be much worse, than I found them: yet every thing has suffered very much, there not being a single Edifice but what is damaged.

What has most surpris'd me is, the number of Cracks in the Walls of the Collegiate Church, which were built without sparing any Cost to make them a complete Piece of Workmanship; and are of an extraordinary Thickness, as one may observe in some of the Openings in the Building and Vaulting: From hence may be conceived a just Idea of the extreme Violence of the roaring Earthquake.-- Upon account of the Inconveniencies attending this Earthquake, an infinite number of People went out of the Town; the Houses and Shops were abandoned instantly, to seek Refuge in the great Piazza: So great was the Consternation, that no one knew what he was about. It was an Object of the greatest Compassion, to see the Astonishment and general Confusion that prevailed; every body looked pale as Death, without knowing what he said or did:— Before the Earthquake on the 19th, the Waters swelled, and then fell again; soon after they swelled half a yard higher than they ever were used to do. It was said, that the same Night, and the following, there was a strong smell of Sulphur in the Streets: This smell was likewise found in the Waters of some Wells. The Sea was seen in sundry situations, now high, and then presently very low again; sometimes strongly agitated, and at others on a sudden calm. Some People said, that it roared with such Violence and Smartness, that its Noise was like the firing of large Cannon. A French Fisherman being then in his Boat, said, that he found it on a sudden raised up a prodigious height; and then it fell so low, that he thought it had touched the bottom of the Sea, and concluded himself lost: During this uncommon Motion, he affirms to have heard one of these Noises resembling the firing of Cannon; and afterwards felt no Storm.



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